

This document gives pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a Minor, Industrial permit. This permit action consists of permitting two industrial storm water outfalls draining the Atlantic Research Corporation Gainesville site. Effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260-00 et seq.

1. Facility Name and Mailing Address: ARC-Gainesville
c/o Geosyntec Consultants
10220 Old Columbia Road, Suite A
Columbia, Maryland 21046
SIC Code: 3764 (Space Propulsion Units & Parts)
3499 (Fabricated Metal Products)
Facility Location: 5945 Wellington Rd.
Gainesville, VA 20155
County: Prince William
Facility Contact Name: Jim Berkes
Telephone Number: 703-915-7024
2. Permit No.: VA0087700
Current Expiration Date: November 11, 2008
Other VPDES Permits: None
Other Permits: VAD023741705 – RCRA
E2/E3/E4 Status: N/A
3. Owner Name: Atlantic Research Corporation
Owner Contact/Title: Steven Lowson
VP, Sr. Associate General Counsel
Telephone Number: 212-986-5500
4. Application Complete Date: November 17, 2008
Permit Drafted By: Anna Westernik / Douglas Frasier
Date Drafted: January 23, 2009
Draft Permit Reviewed By: Alison Thompson
Date Reviewed: February 4, 2009
Public Comment Period: Start Date: May 21, 2009
End Date: June 19, 2009
5. Receiving Waters Information: See **Attachment 1** for the Flow Frequency Determination
Receiving Stream Name: Unnamed Tributary to Rocky Branch
Drainage Area at Outfall 001: 0.91 square miles
Outfall 001 River Mile: 2.15
Drainage Area at Outfall 002: 1.02 square miles
Outfall 002 River Mile: 0.05
Stream Basin: Potomac River
Subbasin: Potomac River
Section: 7a
Stream Class: III
Special Standards: g
Waterbody ID: VAN-A19R
7Q10 Low Flow: 0.0 MGD
7Q10 High Flow: 0.0 MGD
1Q10 Low Flow: 0.0 MGD
1Q10 High Flow: 0.0 MGD
Harmonic Mean Flow: 0.0 MGD
30Q5 Flow: 0.0 MGD
303(d) Listed: No
30Q10 Flow: 0.0 MGD
TMDL Approved: Yes (Downstream – bacteria)
Date TMDL Approved: November 6, 2006
6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

<input checked="" type="checkbox"/> State Water Control Law <input checked="" type="checkbox"/> Clean Water Act <input checked="" type="checkbox"/> VPDES Permit Regulation <input checked="" type="checkbox"/> EPA NPDES Regulation	<input type="checkbox"/> EPA Guidelines <input checked="" type="checkbox"/> Water Quality Standards <input type="checkbox"/> Other
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7. Licensed Operator Requirements: Not Applicable
8. Reliability Class: Not Applicable

9. Permit Characterization:

<input checked="" type="checkbox"/> Private	<input type="checkbox"/> Effluent Limited	<input type="checkbox"/> Possible Interstate Effect
<input type="checkbox"/> Federal	<input checked="" type="checkbox"/> Water Quality Limited	<input type="checkbox"/> Compliance Schedule Required
<input type="checkbox"/> State	<input type="checkbox"/> Toxics Monitoring Program Required	<input type="checkbox"/> Interim Limits in Permit
<input type="checkbox"/> POTW	<input type="checkbox"/> Pretreatment Program Required	<input type="checkbox"/> Interim Limits in Other Document
<input type="checkbox"/> TMDL		

10. Wastewater Sources and Treatment Description:

The Atlantic Research Corporation (ARC) – Gainesville facility conducted research, development, testing and manufacturing of propulsion systems for tactical missiles based on solid propellants; including related metal and plastic components. The 480-acre facility has two industrial storm water outfalls. All internal outfalls in the previous permit reissuance are no longer utilized since operations were discontinued in April 2005. Remediation at the site consists of bioremediation systems; utilizing a methanol and purge water mixture to inject into the aquifer to aid in the anaerobic breakdown of contaminants. These systems are closed loop; thus, there is no discharge.

Outfall 001 discharges into an unnamed tributary (UT) of Rocky Branch at river mile 2.15, which eventually flows to Rocky Branch and then Broad Run. At river mile 0.05, Outfall 002 discharges to a ravine that empties into the unnamed tributary of Rocky Branch; same as that of Outfall 001.

Outfall 001

Several UTs of Rocky Branch present on the ARC property contribute to the discharge from Outfall 001. These tributaries, majority which begin on the ARC property, eventually converge at a point near Wellington Road. One UT originates offsite, west of the property and receives runoff from a concrete plant (Newington Concrete -- Gainesville). There is a settling basin on the concrete plant property to collect runoff from the concrete facility prior to its entering the ARC property. A second UT also originates offsite, south of the property and receives runoff from an entertainment complex (Nissan Pavilion). A storm water retention basin collects runoff from the large parking area at the Nissan Pavilion prior to its flowing under Wellington Road and entering the ARC property. This Outfall receives storm water from a 0.91 square mile drainage area. Riprap and weirs have been positioned in the channel to mitigate any volatile organic compounds (VOCs) that may be present from historical contamination.

Outfall 002

The discharge from Outfall 002 is primarily storm water, collected and retained in three ponds present on the ARC property prior to discharging into Rocky Creek, UT. Sediments in these ponds have never been removed. This Outfall receives storm water from a 1.02 square mile drainage area. Riprap is present in this channel as mitigation for any possible VOCs that may be present.

Bioremediation

In 1986, perchloroethylene and other VOC contamination was detected in onsite drinking/production water wells. ARC notified EPA Region III of the well contamination and implemented interim measures to treat the drinking/production well water. In May 1989, ARC entered into a Resource Conservation Recovery Act (RCRA) Consent Order with EPA. The order required additional interim measures, a facility investigation and a corrective measures study and implementation.

ARC installed a groundwater treatment (pump and treat) system to remove VOCs from the drinking water/production wells and to decontaminate the aquifer. The groundwater treatment system was designed to meet Virginia Department of Health (VDH) Drinking Water Standards. ARC is now connected to a public water supply; the drinking water wells are no longer utilized. Previous limits for VOCs placed on the discharge to Rocky Branch, UT from the groundwater remediation systems were derived from the VDH Drinking Water Standards.

Pollutants from the contaminated groundwater are now mitigated using bioremediation. The purge water is reinjected into the aquifer, after the addition of methanol, under an Underground Injection Control (UIC) authorization from EPA region III.

See **Attachment 2** for the NPDES Permit Rating Worksheet.

See **Attachment 3** for a map showing storm water drainage areas at the facility.

TABLE 1 OUTFALL DESCRIPTION				
Outfall Number	Discharge Sources	Treatment	Maximum 30-day Flow	Outfall Latitude / Longitude
001	Industrial Storm Water	See Item 10 above.	128.4 MG	38° 47' 05" 77° 34' 47"
002	Industrial Storm Water	See Item 10 above.	27.6 MG	38° 47' 01" 77° 34' 39"

11. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge:

TABLE 2 INTAKES AND MONITORING STATIONS		
Permit / ID Number	Description	Latitude / Longitude
PWSID 6685100	Lake Manassas - Drinking Water Withdrawal for the city of Manassas	38° 45' 50" / 77° 37' 25"
1aBRU011.24	DEQ Ambient Monitoring Station – Broad Run at Sudley Manor Drive	38° 44' 49" / 77° 34' 31"
PWSID 6059500	Occoquan Reservoir - Drinking Water Withdrawal for Fairfax Water	38° 41' 40" / 77° 16' 38"

Topographic map 206D (Gainesville) shows outfall locations and the downstream monitoring station 1aBRU011.24 on Broad Run at Sudley Manor Drive (**Attachment 4**).

12. Sludge Treatment and Disposal Methods:

This is an industrial facility that does not generate or treat sewage sludge.

13. Material Storage:

TABLE 3 MATERIAL STORAGE		
Materials Description	Volume Stored	Spill / Stormwater Prevention Measures
Methanol	55-gallon drums (6-8 at any time)	Stored under roof with secondary containment
Diesel Fuel	Various sized containers (1-gal. to 5-gal.)	Stored under roof
Fuel Oil	One fuel oil tank – heating only	Secondary containment

14. Site Inspection: Performed by Anna Westernik and Doug Frasier on December 2, 2008 (see **Attachment 5**).**15. Receiving Stream Water Quality and Water Quality Standards:**a. Ambient Water Quality Data

ARC-Gainesville discharges into an unnamed tributary of Rocky Branch that flows to Rocky Branch and ultimately to Broad Run. The discharge is located in the VAN-A19R waterbody (Broad Run/Kettle Run waterbody). The Department of Environmental Quality (DEQ) does not monitor Rocky Branch, UT or Rocky Branch. The nearest downstream monitoring station is 1aBRU011.24, located on Broad Run at Sudley Manor Drive. This station is located approximately 2.99 miles downstream of Outfall 001 and approximately 2.86 river miles downstream of Outfall 002. Various discharges are located in this waterbody (see **Attachment 6**).

The portion of Broad Run that receives the drainage from Rocky Branch is listed as impaired for not meeting the Recreation Use goal due to exceedances of the water quality criterion for *E. coli* bacteria. Sufficient excursions from the instantaneous *E. coli* bacteria criterion were recorded at DEQ's ambient water quality monitoring station 1aBRU011.24. This impairment does not affect the ARC-Gainesville discharges since it is an industrial facility and the pollutant of concern is not present in the discharge. Therefore, the bacteria TMDL approved by EPA on November 10, 2006 does not have an *E. coli* wasteload allocation for this facility. (See **Attachment 7**, Planning Statement)

b. Receiving Stream Water Quality Criteria

Part IX of 9 VAC 25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream Rocky Branch, UT, is located within Section 7a of the Potomac River Basin and classified as Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

Attachment 8 details other water quality criteria applicable to the receiving stream.

c. Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9 VAC 25-260-360, 370 and 380) designates the river basins, sections, classes and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Rocky Branch, UT, is located within Section 7a of the Potomac River Basin. This section has been designated with a special standard of 'g'.

Special Standard 'g' refers to the Occoquan Watershed Policy (9 VAC 25-410). The regulation sets stringent treatment and discharge requirements in order to improve and protect water quality, particularly since the waters are an important water supply for Northern Virginia. The regulation generally prohibits new sewage treatment plants and only allows minor industrial discharges.

ARC-Gainesville is located within the Occoquan River Watershed and is subject to the Occoquan Policy. The portion of the Policy pertinent to ARC-Gainesville is 9 VAC 25-410-20.G:

- 1). Point Sources other than regional plants will be permitted as regulated or required by the Virginia Pollutant Discharge Elimination System (VPDES) Permit Regulation.
- 2). VPDES Permits may be issued for single-family homes with failing septic tanks, storm water, pollution remediation projects and minor industries. The permitting of major discharges (as defined in 40 CFR Part 122) other than regional sewage treatment plants is strictly prohibited with the exception of pollution control remediation projects which are shown to be feasible and no other alternatives are available.
- 3). No permit as authorized in subdivisions 1 and 2 shall be issued or reissued unless the applicant demonstrates that it is not feasible to connect to a regional plant and that there is not a feasible alternative except to discharge.

d. Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched for records to determine if there are threatened or endangered species in the vicinity of the discharge. The following threatened or endangered species were identified within a 2 mile radius of the discharge: Brook Floater (mussel), Upland Sandpiper (song bird), Loggerhead Shrike (song bird), Henslow's Sparrow (song bird), Bald Eagle and Migrant Loggerhead Shrike (song bird). The limits proposed in this draft permit are protective of the Virginia Water Quality Standards; therefore, protect the threatened and endangered species found near the discharge.

16. Antidegradation (9 VAC 25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 based on the 7Q10 and 1Q10 critical flows. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points are equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA s) are calculated. In this case, since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLAs are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency and statistical characteristics of the effluent data.

a. Effluent Screening

Effluent data obtained from Discharge Monitoring Reports (DMRs) has been reviewed and determined to be suitable for evaluation. Please see **Attachment 9** for a summary of effluent data reported during the last permit term.

b. Effluent Monitoring, Outfall 001 and 002 – Storm Water Only Pollutants

VA-DEQ Guidance Memo 96-001 recommends that chemical water quality-based limits not be placed on storm water outfalls because the methodology for developing limits and the proper method of sampling is still a concern and under review by EPA. Rather, performance target values are established for pollutants of concern that should be given special emphasis during development and review of the Storm Water Pollution Prevention Plan (SWPPP). Outfall data above these performance values require the permittee to re-evaluate the effectiveness of the SWPPP and corrective actions needed to mitigate impacts to the receiving waters.

Even though ARC-Gainesville is no longer in operation, there exist possible sources of contamination; including metal buildings, exposed piping, scrap piles and HVAC units. A review of the pollutant scan conducted during the permit application process indicated that the following metals were found above quantification levels: Aluminum, Barium, Boron, Iron and Magnesium.

It was staff's best professional judgement to reference the VPDES Industrial Storm Water General Permit to determine the performance target values for these metals. This general permit covers storm water discharges from a wide variety of industrial activities and contains industry-specific sections describing the limitation and monitoring requirements. The past activities at the ARC-Gainesville facility would have been covered under Sector AA (Fabricated Metal Products) and Sector AB (Transportation Equipment, Industrial or Commercial Machinery); 9 VAC 25-151-340 and 9 VAC 25-151-350, respectively. Sector AA provides target values for Aluminum, Iron and Zinc for this type of industry at 750 µg/L, 1000 µg/L, and 120 µg/L, respectively.

Barium, Boron and Magnesium were not included in the aforementioned General Permit nor were these metals listed in the Virginia Water Quality Standards. Therefore, it is proposed that these metals not be monitored since there is no known impact on water quality.

In addition to the aforementioned metals, the 2009 General Permit reissuance will also require those industries under Sector AA to monitor for Total Suspended Solids. It is proposed that the performance target value of 100 mg/L be included in this reissuance.

Table 4 summarizes the performance target values.

TABLE 4 PERFORMANCE TARGET VALUES	
Parameter	Performance Target Value
Total Recoverable Aluminum	750 µg/L
Total Recoverable Iron	1000 µg/L
Total Recoverable Zinc	120 µg/L
Total Suspended Solids	100 mg/L

Should quarterly storm water data indicate exceedances of the established performance values; the permittee shall notify DEQ-NRO of corrective actions proposed or taken (see **Section 21.f**).

c. Effluent Monitoring Summary

The effluent monitoring requirements are presented in the following tables. Monitoring was established for pH, Total Recoverable Aluminum, Total Recoverable Iron, Total Recoverable Zinc and Total Suspended Solids.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

18. Antibacksliding:

The backsliding proposed with this reissuance conforms to the anti-backsliding provisions of Section 402(o) of the Clean Water Act, 9 VAC 25-31-220.L., and 40 § CFR 122.44.

Internal Outfalls 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111 and 201 were removed during this reissuance since all operations and their respective industrial sources have ceased at this facility.

Temperature was not included for Outfall 001 and Outfall 002 since there are no industrial sources contributing to these Outfalls; only stormwater runoff.

The acute TMP monitoring requirements for Outfall 001 were removed since all results obtained during the last permit term indicated that the stormwater leaving the facility was not toxic to aquatic life (**Attachment 10**).

19a. Effluent Limitations/Monitoring Requirements for Outfall 001:

Maximum Flow of stormwater from this Industrial Facility is 128.4 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
pH	3	N/A	N/A	6.0 S.U.	9.0 S.U.	1/Q	Grab
Total Recoverable Aluminum (µg/L)	2,4	N/A	N/A	N/A	NL	1/Q	Grab
Total Recoverable Iron (µg/L)	2,4	N/A	N/A	N/A	NL	1/Q	Grab
Total Recoverable Zinc (µg/L)	2,4	N/A	N/A	N/A	NL	1/Q	Grab
Total Suspended Solids (mg/L)	2,4	N/A	N/A	N/A	NL	1/Q	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgement
3. Water Quality Standards
4. 9 VAC 25-151

(VPDES Industrial Storm Water General Permit

N/A = Not applicable.

NL = Monitor and report.

1/Q = Once every calendar quarter.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

The quarterly monitoring periods shall be January through March, April through June, July through September and October through December.

The DMR shall be submitted no later than the 10th day of the month following the monitoring period.

19b. Effluent Limitations/Monitoring Requirements for Outfall 002:

Maximum Flow of stormwater from this Industrial Facility is 27.6 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Daily Maximum	Minimum	Maximum	Frequency	Sample Type
pH	3	N/A	N/A	6.0 S.U.	9.0 S.U.	1/Q	Grab
Total Recoverable Aluminum (µg/L)	2,4	N/A	N/A	N/A	NL	1/Q	Grab
Total Recoverable Iron (µg/L)	2,4	N/A	N/A	N/A	NL	1/Q	Grab
Total Recoverable Zinc (µg/L)	2,4	N/A	N/A	N/A	NL	1/Q	Grab
Total Suspended Solids (mg/L)	2,4	N/A	N/A	N/A	NL	1/Q	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements
2. Best Professional Judgement
3. Water Quality Standards
4. 9 VAC 25-151

(VPDES Industrial Storm Water General Permit

N/A = Not applicable.

NL = Monitor and report.

1/Q = Once every calendar quarter.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

The quarterly monitoring periods shall be January through March, April through June, July through September and October through December.

The DMR shall be submitted no later than the 10th day of the month following the monitoring period.

20. Other Permit Requirements:

- a. Part I.B. of the permit contains quantification levels and compliance reporting instructions.

9 VAC 25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

- b. Permit Section Part I.C. details the requirements of a Storm Water Management Plan.

9 VAC 25-31-10 defines discharges of storm water from municipal treatment plants with design flow of 1.0 MGD or more, or plants with approved pretreatment programs, as discharges of storm water associated with industrial activity. 9 VAC 25-31-120 requires a permit for these discharges. The Storm Water Pollution Prevention Plan requirements are derived from the VPDES general permit for discharges of storm water associated with industrial activity, 9 VAC 25-151-10 et seq.

21. Other Special Conditions:

- a. O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9 VAC 25-31-190.E. On or before September 22, 2009, the permittee shall submit for approval a revised Operations and Maintenance (O&M) Manual to the Department of Environmental Quality – Northern Regional Office (DEQ-NRO). Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.
- b. Water Quality Criteria Reopener. The VPDES Permit Regulation at 9 VAC 25-31-220 D. requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should effluent monitoring indicate the need for any water quality-based limitations, this permit may be modified or alternatively revoked and reissued to incorporate appropriate limitations.

- c. Notification Levels. The permittee shall notify the Department as soon as they know or have reason to believe:
- 1) That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
 - a) One hundred micrograms per liter;
 - b) Two hundred micrograms per liter for acrolein and acrylonitrile; five hundred micrograms per liter for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter for antimony;
 - c) Five times the maximum concentration value reported for that pollutant in the permit application; or
 - d) The level established by the Board.
 - 2) That any activity has occurred or will occur which would result in any discharge, on a nonroutine or infrequent basis, of a toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:
 - a) Five hundred micrograms per liter;
 - b) One milligram per liter for antimony;
 - c) Ten times the maximum concentration value reported for that pollutant in the permit application; or
 - d) The level established by the Board.
- d. BMP. The permittee shall submit for approval a revised Best Management Practices (BMP) plan for the control of leaks, spills and storm water runoff from the facility on or before September 22, 2009. The BMP plan becomes an enforceable part of the permit. The permittee shall amend the BMP plan whenever there is a change in the facility or operation of the facility or if the BMP plan proves to be ineffective in preventing the release of significant amounts of pollutants. Changes to the BMP plan shall be submitted for staff approval within 90 days of the effective date of the changes. Upon approval, the amended BMP plan becomes an enforceable part of the permit.
- e. Materials Handling/Storage. 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia §62.1-44.16 and §62.1-44.17 authorize the Board to regulate the discharge of industrial waste or other waste.
- f. Corrective Action Notification. Should any quarterly storm water data indicate exceedances of the performance target values; the permittee shall reexamine and reevaluate the Storm Water Pollution Prevention Plan (SWPPP) and the current Best Management Practices (BMP). The permittee shall submit to DEQ-NRO, in writing, corrective actions taken, both completed and planned, within 30 days after DMR submittal for that quarterly monitoring period.
- g. TMDL Reopener. This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL that may be developed and approved for the receiving stream.

22. Permit Section Part II: Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:

- a. Special Conditions:
- Removed the Prohibition of Chemical Additives to Cooling Water without Prior Notification condition with this reissuance.
 - Corrective Action Notification condition was included with this reissuance.
- b. Monitoring and Effluent Limitations:
- Internal Outfalls 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111 and 201 have been removed with this reissuance. The sources of these Outfalls have eliminated.
 - The Toxics Management Program (TMP) monitoring has been removed with this reissuance. There was no indication of toxicity in the results obtained during the last permit term.
 - Temperature monitoring was removed for both Outfall 001 and Outfall 002 since there are no industrial sources present in the discharge.
 - The following parameters, per the VPDES Industrial Stormwater General Permit, are proposed due to the historical operations at this facility: Aluminum, Iron, Zinc (all Total Recoverable) and Total Suspended Solids.

24. Variances / Alternate Limits or Conditions: Not Applicable**25. Public Notice Information:**

First Public Notice Date: May 20, 2009

Second Public Notice Date: May 27, 2009

Public Notice Information is required by 9 VAC 25-31-280 B. All pertinent information is on file and may be inspected and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3837, atwesternik@deq.virginia.gov. See **Attachment 11** for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

26. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):

The downstream impairments and subsequent bacterial TMDL for Broad Run does not include this facility since the pollutant of concern is not present in the discharge.

27. Additional Comments:

Previous Board Action(s): None.

Staff Comments: None.

Public Comment: No comments were received during the public notice.

EPA Checklist: The checklist can be found in **Attachment 12**.

Fact Sheet Attachments – Table of Contents

Atlantic Research Corporation - Gainesville
VA0087700
2009 Reissuance

Attachment 1	Flow Frequency Determination
Attachment 2	NPDES Permit Rating Worksheet
Attachment 3	Facility Map
Attachment 4	Topographic Map
Attachment 5	Site Visit Memo
Attachment 6	Discharges Located in VAN-A19R Waterbody
Attachment 7	Planning Statement
Attachment 8	Water Quality Criteria/Wasteload Allocation Analysis
Attachment 9	Effluent Data
Attachment 10	TMP Review Memo
Attachment 11	Public Notice
Attachment 12	EPA Checklist

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
Water Quality Assessments and Planning
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Flow Frequency Determination
Atlantic Research Corp. Gainesville - VA#0087700

TO: Lyle Anne Kent, NRO

FROM: Paul E. Herman, P.E., WQAP

DATE: June 5, 1998

COPIES: Ron Gregory, Charles Martin, File

Northern VA. Region
Dept. of Env. Quality

RECEIVED

JUN 8 1998

This memo supercedes Ed Morrow's memo to you dated May 15, 1992 concerning the subject VPDES permit.

The Atlantic Research Corporation, Gainesville discharges to an unnamed tributary to Rocky Branch via two outfalls near Gainesville, VA. Stream flow frequencies are required at each site for use by the permit writer in developing effluent limitations for the VPDES permit.

Outfall 001:

The VDEQ operated a continuous record gage on the Bull Run near Catharpin, VA (#01656725) from 1969 to 1987. The gage was located at the Route 705 bridge in Prince William County, VA. The flow frequencies for the gage and the discharge point are presented below. The values at the discharge point were determined by drainage area proportions and do not address any withdrawals, discharges, or springs lying upstream.

Bull Run near Catharpin, VA (#01656725):

Drainage Area = 25.8 mi²
1Q10 = 0.0 cfs High Flow 1Q10 = - cfs
7Q10 = 0.0 cfs High Flow 7Q10 = - cfs
30Q5 = 0.06 cfs HM = 0.0 cfs

The high flow months are not contiguous. Therefore, high flow frequencies could not be calculated.

UT to Rocky Branch at discharge point: Outfall 001

Drainage Area = 0.92 mi²
1Q10 = 0.0 cfs High Flow 1Q10 = - cfs
7Q10 = 0.0 cfs High Flow 7Q10 = - cfs
30Q5 = 0.002 cfs = 0.001 MGD HM = 0.0 cfs
cfs x 0.6463 = MGD

Outfall 002:

The flow frequencies at Outfall 002 were determined by inspection of the USGS Gainesville Quadrangle topographical map which shows the receiving stream as a dry ravine at the discharge point. The flow frequencies for dry ravines are 0.0 cfs for the 1Q10, 7Q10, 30Q5, high flow 1Q10, high flow 7Q10, and the harmonic mean.

If you have any questions concerning this analysis, please let me know.

NPDES PERMIT RATING WORK SHEETVPDES NO. : VA0087700

<input type="checkbox"/>	Regular Addition
<input type="checkbox"/>	Discretionary Addition
<input checked="" type="checkbox"/>	Score change, but no status Change
<input type="checkbox"/>	Deletion

Facility Name: Atlantic Research Corporation – GainesvilleCity / County: Gainesville / Prince William CountyReceiving Water: Rocky Branch

Reach Number: _____

Is this facility a steam electric power plant (sic =4911) with one or more of the following characteristics?

1. Power output 500 MW or greater (not using a cooling pond/lake)

2. A nuclear power Plant

3. Cooling water discharge greater than 25% of the receiving stream's 7Q10 flow rate

Is this permit for a municipal separate storm sewer serving a population greater than 100,000?

☐ YES; score is 700 (stop here)☒ NO; (continue)☐ Yes; score is 600 (stop here) ☒ NO; (continue)**FACTOR 1: Toxic Pollutant Potential**PCS SIC Code: _____ Primary Sic Code: 3764 Other Sic Codes: 3499Industrial Subcategory Code: 99 (Code 000 if no subcategory)

Determine the Toxicity potential from Appendix A. Be sure to use the TOTAL toxicity potential column and check one)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input type="checkbox"/> No process waste streams	0	0	<input type="checkbox"/> 3.	3	15	<input type="checkbox"/> 7.	7	35
<input checked="" type="checkbox"/> 1.	1	5	<input type="checkbox"/> 4.	4	20	<input type="checkbox"/> 8.	8	40
<input type="checkbox"/> 2.	2	10	<input type="checkbox"/> 5.	5	25	<input type="checkbox"/> 9.	9	45
			<input type="checkbox"/> 6.	6	30	<input type="checkbox"/> 10.	10	50

Code Number Checked: 1**Total Points Factor 1:** 5**FACTOR 2: Flow/Stream Flow Volume** (Complete either Section A or Section B; check only one)**Section A – Wastewater Flow Only considered**

Wastewater Type (see Instructions)	Code	Points
Type I: Flow < 5 MGD	<input type="checkbox"/> 11	0
Flow 5 to 10 MGD	<input type="checkbox"/> 12	10
Flow > 10 to 50 MGD	<input type="checkbox"/> 13	20
Flow > 50 MGD	<input type="checkbox"/> 14	30
Type II: Flow < 1 MGD	<input type="checkbox"/> 21	10
Flow 1 to 5 MGD	<input type="checkbox"/> 22	20
Flow > 5 to 10 MGD	<input type="checkbox"/> 23	30
Flow > 10 MGD	<input type="checkbox"/> 24	50
Type III: Flow < 1 MGD	<input checked="" type="checkbox"/> 31	0
Flow 1 to 5 MGD	<input type="checkbox"/> 32	10
Flow > 5 to 10 MGD	<input type="checkbox"/> 33	20
Flow > 10 MGD	<input type="checkbox"/> 34	30

Section B – Wastewater and Stream Flow Considered

Wastewater Type (see Instructions)	Percent of Instream Wastewater Concentration at Receiving Stream Low Flow	Code	Points
Type I/III:	< 10 %	<input type="checkbox"/> 41	0
	10 % to < 50 %	<input type="checkbox"/> 42	10
	> 50%	<input type="checkbox"/> 43	20
Type II:	< 10 %	<input type="checkbox"/> 51	0
	10 % to < 50 %	<input type="checkbox"/> 52	20
	> 50 %	<input type="checkbox"/> 53	30

Code Checked from Section A or B: 31**Total Points Factor 2:** 0

NPDES PERMIT RATING WORK SHEET

FACTOR 3: Conventional Pollutants

(only when limited by the permit)

A. Oxygen Demanding Pollutants: (check one) ☐ BOD ☐ COD ☐ Other: _____

Permit Limits: (check one)

	Code	Points
<input type="checkbox"/> < 100 lbs/day	1	0
<input type="checkbox"/> 100 to 1000 lbs/day	2	5
<input type="checkbox"/> > 1000 to 3000 lbs/day	3	15
<input type="checkbox"/> > 3000 lbs/day	4	20

Code Number Checked: N/A**Points Scored:** 0

B. Total Suspended Solids (TSS)

Permit Limits: (check one)

	Code	Points
<input type="checkbox"/> < 100 lbs/day	1	0
<input type="checkbox"/> 100 to 1000 lbs/day	2	5
<input type="checkbox"/> > 1000 to 5000 lbs/day	3	15
<input type="checkbox"/> > 5000 lbs/day	4	20

Code Number Checked: N/A**Points Scored:** 0C. Nitrogen Pollutants: (check one) ☐ Ammonia ☐ Other: _____

Permit Limits: (check one)

	Code	Points
<input type="checkbox"/> < 300 lbs/day	1	0
<input type="checkbox"/> 300 to 1000 lbs/day	2	5
<input type="checkbox"/> > 1000 to 3000 lbs/day	3	15
<input type="checkbox"/> > 3000 lbs/day	4	20

Code Number Checked: N/A**Points Scored:** 0**Total Points Factor 3:** 0**FACTOR 4: Public Health Impact**

Is there a public drinking water supply located within 50 miles downstream of the effluent discharge (this include any body of water to which the receiving water is a tributary)? A public drinking water supply may include infiltration galleries, or other methods of conveyance that ultimately get water from the above reference supply.

☒ YES; (If yes, check toxicity potential number below)☐ NO; (If no, go to Factor 5)

Determine the *Human Health* potential from Appendix A. Use the same SIC doe and subcategory reference as in Factor 1. (Be sure to use the *Human Health* toxicity group column – check one below)

Toxicity Group	Code	Points	Toxicity Group	Code	Points	Toxicity Group	Code	Points
<input type="checkbox"/> No process waste streams	0	0	<input type="checkbox"/> 3.	3	0	<input type="checkbox"/> 7.	7	15
<input checked="" type="checkbox"/> 1.	1	0	<input type="checkbox"/> 4.	4	0	<input type="checkbox"/> 8.	8	20
<input type="checkbox"/> 2.	2	0	<input type="checkbox"/> 5.	5	5	<input type="checkbox"/> 9.	9	25
			<input type="checkbox"/> 6.	6	10	<input type="checkbox"/> 10.	10	30

Code Number Checked: 1**Total Points Factor 4:** 0

NPDES PERMIT RATING WORK SHEET

FACTOR 5: Water Quality Factors

Is (or will) one or more of the effluent discharge limits based on water quality factors of the receiving stream (rather than technology-based federal effluent guidelines, or technology-based state effluent guidelines), or has a wasteload allocation been assigned to the discharge

<input type="checkbox"/> YES	Code 1	Points 10
<input checked="" type="checkbox"/> NO	2	0

B. Is the receiving water in compliance with applicable water quality standards for pollutants that are water quality limited in the permit?

<input type="checkbox"/> YES	Code 1	Points 0
<input type="checkbox"/> NO	2	5

C. Does the effluent discharged from this facility exhibit the reasonable potential to violate water quality standards due to whole effluent toxicity?

<input type="checkbox"/> YES	Code 1	Points 10
<input checked="" type="checkbox"/> NO	2	0

Code Number Checked: A 2 B N/A C 2
Points Factor 5: A 0 + B 0 + C 0 = 0

FACTOR 6: Proximity to Near Coastal Waters

A. Base Score: Enter flow code here (from factor 2) 31

Check appropriate facility HPRI code (from PCS):				Enter the multiplication factor that corresponds to the flow code: <u>0.00</u>	
HPRI#	Code	HPRI Score	Flow Code	Multiplication Factor	
<input type="checkbox"/> 1	1	20	11, 31, or 41	0.00	
<input type="checkbox"/> 2	2	0	12, 32, or 42	0.05	
<input type="checkbox"/> 3	3	30	13, 33, or 43	0.10	
<input type="checkbox"/> 4	4	0	14 or 34	0.15	
<input checked="" type="checkbox"/> 5	5	20	21 or 51	0.10	
			22 or 52	0.30	
			23 or 53	0.60	
			24	1.00	

HPRI code checked: 4

Base Score (HPRI Score): 0 X (Multiplication Factor) 0.00 = 0

B. Additional Points – NEP Program

For a facility that has an HPRI code of 3, does the facility discharge to one of the estuaries enrolled in the National Estuary Protection (NEP) program (see instructions) or the Chesapeake Bay?

<input type="checkbox"/> 1	Code 1	Points 10
<input checked="" type="checkbox"/> 2	2	0

C. Additional Points – Great Lakes Area of Concern

For a facility that has an HPRI code of 5, does the facility discharge any of the pollutants of concern into one of the Great Lakes' 31 area's of concern (see instructions)?

<input type="checkbox"/> 1	Code 1	Points 10
<input checked="" type="checkbox"/> 2	2	0

Code Number Checked: A 4 B 2 C 2
Points Factor 6: A 0 + B 0 + C 0 = 0

NPDES PERMIT RATING WORK SHEET

SCORE SUMMARY

<u>Factor</u>	<u>Description</u>	<u>Total Points</u>
1	Toxic Pollutant Potential	5
2	Flows / Streamflow Volume	0
3	Conventional Pollutants	0
4	Public Health Impacts	0
5	Water Quality Factors	0
6	Proximity to Near Coastal Waters	0
TOTAL (Factors 1 through 6)		5

S1. Is the total score equal to or greater than 80 ☐ YES; (Facility is a Major) ☒ NO

S2. If the answer to the above questions is no, would you like this facility to be discretionary major?

☒ NO

☐ YES; (Add 500 points to the above score and provide reason below:

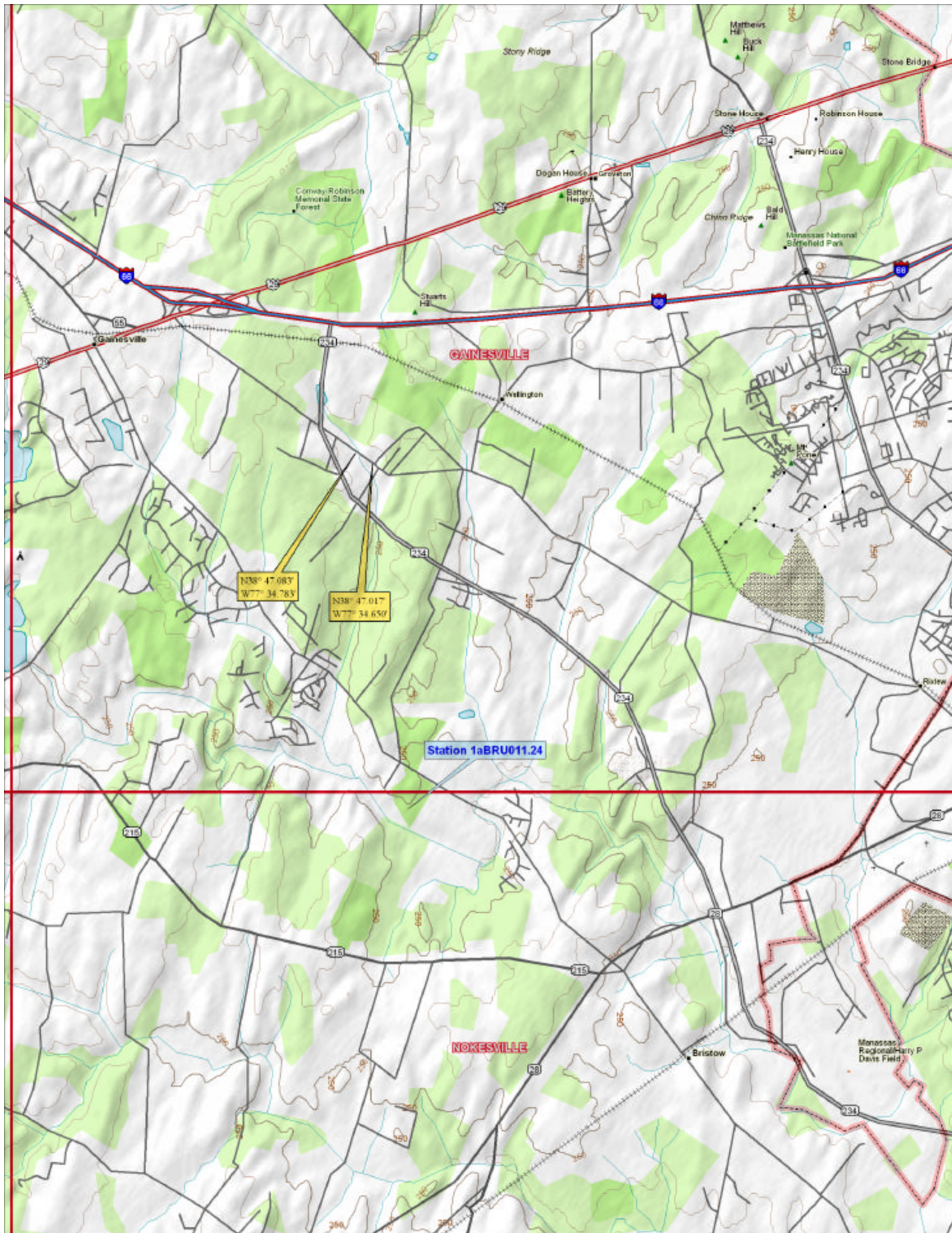
Reason: _____

NEW SCORE : 5

OLD SCORE : 55

Permit Reviewer's Name : Douglas Frasier
Phone Number: (703) 583-3873
Date: 18 December 2008





MEMORANDUM

Date: 19 December 2008

To: File

From: Douglas Frasier, Permit Writer

Subject: ARC-Gainesville (VA0087700)

On 2 December 2008, a DEQ site visit was made to this facility for the purpose of reissuing the VPDES permit. Persons present during the inspection were Martin Dodd of the Atlantic Research Corporation (ARC), James Berkes of Geosyntec, Anna Westernik of DEQ and myself.

The ARC-Gainesville facility conducted research and development, testing and manufacturing of propulsion systems for tactical missiles based on solid propellants. Operations ceased in April 2005.

The facility consists of approximately 480 acres, has two outfalls and all previous 12 internal outfalls are no longer discharging.

The two external outfalls discharge to an unnamed tributary of Rocky Branch, that eventually flow to Rocky Branch and then to Broad Run. Sources of the discharge consist of stormwater; there are no industrial sources present. The groundwater remediation systems in place are closed loop; no discharge.

Several unnamed tributaries of Rocky Branch present on the ARC property contribute to the discharge from Outfall 001. These tributaries, which begin on the ARC property, eventually converge at a point near Wellington Road. One UT originates offsite (west of the property) and receives runoff from a concrete plant. There is a settling basin on the concrete plant property to collect runoff from the concrete facility prior to its entering the ARC property.

Outfall 002 receives stormwater from three ponds present on the ARC property. Sediments in these ponds have never been removed.

Outfalls 001 and 002 receive stormwater from a 457.01-acre and a 13.65-acre drainage area, respectively. To mitigate any VOCs that may be present, weirs and rip-rap are positioned throughout the property in the path of stormwater flow.

Pollutants in the majority of contaminated groundwater are now primarily mitigated using bioremediation; a closed loop system. Therefore, discharge from wells is no longer a contributor to the wastestream. Deep wells (DW) DW-2, DW-10, DW-12, and DW-17 have always been found to be "nondetect" for measured parameters.

All chemicals are stored under cover with appropriate containment.

Stream observations were made near the edge of the property (Outfalls 001 and 002) and at various points of the property. The stream appeared healthy.

Individual Permits

Water Body:VAN-A19R

Permit No	Facility Name	Location Address 1	Location City	County Name	Region	Receiving Stream
VA0020460	Vint Hill Farms Station WWTP	Vint Hill Farms Station Bldg 398	Warrenton	Fauquier County	NRO	Kettle Run
VA0085901	IBM Corporation	9600 Godwin Dr	Manassas	Manassas City	NRO	Cannon Branch
VA0029092	New Baltimore Shell	5021 Lee Hwy	New Baltimore	Fauquier County	NRO	Broad Run, UT
VA0087700	Atlantic Research Corporation - Gainesville former	5945 Wellington Rd	Gainesville	Prince William County	NRO	Rocky Branch, UT
VA0085901	IBM Corporation	9600 Godwin Dr	Manassas	Manassas City	NRO	Cannon Branch, UT
VA0088510	Prince William County - Balls Ford Yard Waste	13000 Balls Ford Rd	Manassas	Prince William County	NRO	Broad Run, UT
VA0064157	Town and Country Restaurant	5063 Lee Hwy	New Baltimore	Fauquier County	NRO	Broad Run, UT

General Permits

Storm Water Industrial

Permit No	Facility	Classification	Region	Water Body	Receiving Stream
VAR051731	Mars Petcare US Incorporated	Active	NRO	VAN-A19R	Dawkins Branch
VAR051094	Norfolk Southern Railway - Manassas Yard	Active	NRO	VAN-A19R	UT, Cannon Branch
VAR051290	Henry's Wrecker Service - Manassas	Active	NRO	VAN-A19R	Clear Creek, UT
VAR051639	Potomac Disposal Services of Virginia, LLC	Active	NRO	VAN-A19R	Broad Run
VAR051646	FedEx National LTL Incorporated - MNS	Active	NRO	VAN-A19R	Cannon Branch - Broad Run
VAR050901	Superior Paving Corporation - Manassas Plant	Active	NRO	VAN-A19R	Cannon Branch
VAR051043	Lockheed Martin - Manassas	Active	NRO	VAN-A19R	Cannon Branch, UT
VAR051117	Alliant Atlantic Food Service	Active	NRO	VAN-A19R	Dawkins Branch, UT
VAR050907	Micron Technology Incorporated	Active	NRO	VAN-A19R	Cannon Branch, UT
VAR050985	Manassas Regional Airport	Active	NRO	VAN-A19R	Cannon Branch
VAR051084	MIFCO - Manassas Ice and Fuel Company	Active	NRO	VAN-A19R	Flat Branch, UT
VAR050904	Hanson Pipe and Precast Incorporated	Active	NRO	VAN-A19R	Broad Run, UT
VAR050859	Glen Gery Corporation - Manassas Quarry	Active	NRO	VAN-A19R	Winters Branch
VAR050908	Branscome Paving Company - Manassas	Active	NRO	VAN-A19R	Dawkins Branch, UT
VAR051030	UPS Freight - Bristow	Active	NRO	VAN-A19R	Tom's Creek
VAR051043	Lockheed Martin - Manassas	Active	NRO	VAN-A19R	Canon Branch, UT
VAR051041	Moses Lake Industries Incorporated	Active	NRO	VAN-A19R	Cannon Branch
VAR051015	Betco Block and Products Incorporated	Active	NRO	VAN-A19R	Dawkins Branch, UT
VAR051476	Old Dominion Freight Line Incorporated - Bristow	Active	NRO	VAN-A19R	Broad Run
VAR051085	Quarles Petroleum - Manassas Bulk Plant	Active	NRO	VAN-A19R	Dawkins Branch, UT
VAR051294	FedEx Freight East Incorporated - Manassas	Active	NRO	VAN-A19R	Cannon Branch
VAR051526	Flightworks Incorporated	Active	NRO	VAN-A19R	Cannon Branch

Concrete

Permit No	Facility	Classification	Region	Water Body	Receiving Stream
VAG110111	Ennstone Incorporated - Manassas	Active	NRO	VAN-A19R	Broad Run, UT

Single Family Homes

Permit No	Facility	Classification	Region	Water Body	Receiving Stream
VAG406040	Wright Howard Residence	Active	NRO	VAN-A19R	Little Bull Run, UT
VAG406420	Gaona Veronica Residence	Active	NRO	VAN-A19R	Kettle Run, UT
VAG406403	Hernandez Jose Residence	Active	NRO	VAN-A19R	Broad Run, UT
VAG406308	Lindholm Allen T Property	Active	NRO	VAN-A19R	Broad Run UT
VAG406038	Rubb Eric J Residence	Active	NRO	VAN-A19R	Broad Run, UT
VAG406401	Harlow - Residence	Active	NRO	VAN-A19R	Broad Run, UT
VAG406427	Wallach Richard Residence	Active	NRO	VAN-A19R	Slate Run, UT
VAG406221	7 Eleven 20412	Active	NRO	VAN-A19R	Chesnut Lick, UT
VAG406231	Franco Carlos Residence	Active	NRO	VAN-A19R	Broad Run, UT
VAG406065	Katsaris Richard Residence	Active	NRO	VAN-A19R	Catharpin Creek, UT
VAG406071	Nossaman Judith D Residence	Active	NRO	VAN-A19R	Broad Run, UT
VAG406233	PWCPS - Transportation Area	Active	NRO	VAN-A19R	Kettle Run, UT
VAG406134	Keys Service Center	Active	NRO	VAN-A19R	South Run, UT
VAG406270	Devon Johanna Residence - Rental Property	Active	NRO	VAN-A19R	Chesnut Lick, UT
VAG406165	Neal Bobby Residence	Active	NRO	VAN-A19R	Little Bull Run - UT
VAG406162	Darne Jackie L - Residence	Active	NRO	VAN-A19R	Chestnut Lick - UT
VAG406431	Capone Constance Residence	Active	NRO	VAN-A19R	Kettle Run, UT
VAG406269	Smelser Jeffrey T Residence	Active	NRO	VAN-A19R	Cedar Run, UT
VAG406236	Gmitter John Residence	Active	NRO	VAN-A19R	Black Branch, UT
VAG406079	Boggs Donnie E Residence	Active	NRO	VAN-A19R	Broad Run, UT
VAG406313	Burke June M Residence	Active	NRO	VAN-A19R	Broad Run UT
VAG406333	Rupp David Residence	Active	NRO	VAN-A19R	Kettle Run UT
VAG406260	Gooding Daniel W - Residence	Active	NRO	VAN-A19R	Broad Run - UT
VAG406076	Tinder W Michael Sr Residence	Active	NRO	VAN-A19R	Catharpin Creek, UT
VAG406234	Kuhlberg Jason Residence	Active	NRO	VAN-A19R	Broad Run, UT
VAG406271	Judge Megan Residence	Active	NRO	VAN-A19R	Kettle Run
VAG406224	Harris Gary Residence	Active	NRO	VAN-A19R	Little Bull Run
VAG406314	Bull Run Mountains Conservancy Incorporated	Active	NRO	VAN-A19R	Broad Run
VAG406447	Sandberg Brian Residence	Active	NRO	VAN-A19R	Kettle Run, UT
VAG406247	Childers Emery E Residence	Active	NRO	VAN-A19R	Chesnut Lick, UT
VAG406316	Beeren and Barry Residence	Active	NRO	VAN-A19R	Broad Run UT
VAG406292	Glasgow Robert Residence	Active	NRO	VAN-A19R	Kettle Run UT
VAG406009	Carrington Charles M Residence	Active	NRO	VAN-A19R	Lick Run

Nonmetallic Mineral Mining

Permit No	Facility	Classification	Region	Water Body	Receiving Stream
VAG840092	Vulcan Construction Materials - Manassas	Active	NRO	VAN-A19R	Cannon Branch
VAG840075	Glen Gery Corporation - Manassas Quarry	Active	NRO	VAN-A19R	Winters Branch
VAG840092	Vulcan Construction Materials - Manassas	Active	NRO	VAN-A19R	Flat Branch
VAG840075	Glen Gery Corporation - Manassas Quarry	Active	NRO	VAN-A19R	Winter's Branch

Car Wash:

Permit No	Facility	Classification	Region	Water Body	Receiving Stream
VAG750167	Suds of Gainesville Limited Liability Corporation	Active	NRO	VAN-A19R	Rocky Branch

To: Anna Westernik
From: Katie Conaway

Date: October 10, 2008
Subject: Planning Statement for Atlantic Research Corporation - Gainesville
Permit Number: VA0087700

Discharge Type: Industrial
Discharge Flow: NA

Receiving Stream: Unnamed Tributary to Rocky Branch
Outfall 001: 38° 47' 05" / 77° 34' 47"
Outfall 002: 38° 47' 01" / 77° 34' 39"
Water Body ID: A19R, PL34

1. Is there monitoring data for the receiving stream?

Outfalls 001 and 002 discharge to an unnamed tributary to Rocky Branch. There is no monitoring data for the unnamed tributary.

- If yes, please attach latest summary.

N/A

- If no, where is the nearest downstream monitoring station.

Rocky Branch drains into Broad Run. The nearest downstream DEQ monitoring station with ambient water quality information, Station 1ABRU011.24, is located on Broad Run at Sudley Manor Drive. This station is approximately 2.99 rivermiles downstream for Outfall 001, and approximately 2.86 rivermiles downstream from Outfall 002.

2. Is the receiving stream on the current 303(d) list?

No.

- If yes, what is the impairment?

N/A

- Has the TMDL been prepared?

N/A

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: **Atlantic Research - Gainesville**

Permit No.: **VA0087700 - Outfall 001**

Receiving Stream: **Rocky Branch, UT**

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	mg/L
90% Temperature (Annual) =	deg C
90% Temperature (Wet season) =	deg C
90% Maximum pH =	SU
10% Maximum pH =	SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

Stream Flows

1Q10 (Annual) =	0 MGD
7Q10 (Annual) =	0 MGD
30Q10 (Annual) =	0 MGD
1Q10 (Wet season) =	0 MGD
30Q10 (Wet season) =	0 MGD
30Q5 =	0 MGD
Harmonic Mean =	0 MGD
Annual Average =	0 MGD

Mixing Information

Annual - 1Q10 Mix =	0 %
- 7Q10 Mix =	0 %
- 30Q10 Mix =	0 %
Wet Season - 1Q10 Mix =	100 %
- 30Q10 Mix =	100 %

Effluent Information

Mean Hardness (as CaCO3) =	76 mg/L
90% Temp (Annual) =	25.8 deg C
90% Temp (Wet season) =	deg C
90% Maximum pH =	7.5 SU
10% Maximum pH =	SU
Discharge Flow =	4.3 MGD

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	--	--	na	2.7E+03	--	--	na	2.7E+03	--	--	--	--	--	--	--	--	--	--	na	2.7E+03
Acrolein	0	--	--	na	7.8E+02	--	--	na	7.8E+02	--	--	--	--	--	--	--	--	--	--	na	7.8E+02
Acrylonitrile ^C	0	--	--	na	6.6E+00	--	--	na	6.6E+00	--	--	--	--	--	--	--	--	--	--	na	6.6E+00
Aldrin ^C	0	3.0E+00	--	na	1.4E-03	3.0E+00	--	na	1.4E-03	--	--	--	--	--	--	--	--	3.0E+00	--	na	1.4E-03
Ammonia-N (mg/l) (Yearly)	0	1.99E+01	2.11E+00	na	--	2.0E+01	2.1E+00	na	--	--	--	--	--	--	--	--	--	2.0E+01	2.1E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	1.99E+01	4.36E+00	na	--	2.0E+01	4.4E+00	na	--	--	--	--	--	--	--	--	--	2.0E+01	4.4E+00	na	--
Anthracene	0	--	--	na	1.1E+05	--	--	na	1.1E+05	--	--	--	--	--	--	--	--	--	--	na	1.1E+05
Antimony	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene ^C	0	--	--	na	7.1E+02	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	--	--	na	7.1E+02
Benzidine ^C	0	--	--	na	5.4E-03	--	--	na	5.4E-03	--	--	--	--	--	--	--	--	--	--	na	5.4E-03
Benzo (a) anthracene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (b) fluoranthene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (k) fluoranthene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (a) pyrene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Bis(2-Chloroethyl) Ether	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Bis(2-Chloroisopropyl) Ether	0	--	--	na	1.7E+05	--	--	na	1.7E+05	--	--	--	--	--	--	--	--	--	--	na	1.7E+05
Bromoform ^C	0	--	--	na	3.6E+03	--	--	na	3.6E+03	--	--	--	--	--	--	--	--	--	--	na	3.6E+03
Butylbenzylphthalate	0	--	--	na	5.2E+03	--	--	na	5.2E+03	--	--	--	--	--	--	--	--	--	--	na	5.2E+03
Cadmium	0	2.9E+00	9.1E-01	na	--	2.9E+00	9.1E-01	na	--	--	--	--	--	--	--	--	--	2.9E+00	9.1E-01	na	--
Carbon Tetrachloride ^C	0	--	--	na	4.4E+01	--	--	na	4.4E+01	--	--	--	--	--	--	--	--	--	--	na	4.4E+01
Chlordane ^C	0	2.4E+00	4.3E-03	na	2.2E-02	2.4E+00	4.3E-03	na	2.2E-02	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	2.2E-02
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane ^C	0	--	--	na	3.4E+02	--	--	na	3.4E+02	--	--	--	--	--	--	--	--	--	--	na	3.4E+02
Chloroform ^C	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	4.0E+02	--	--	--	--	--	--	--	--	--	--	na	4.0E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	4.6E+02	5.9E+01	na	--	4.6E+02	5.9E+01	na	--	--	--	--	--	--	--	--	--	4.6E+02	5.9E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Copper	0	1.0E+01	7.1E+00	na	--	1.0E+01	7.1E+00	na	--	--	--	--	--	--	--	--	--	1.0E+01	7.1E+00	na	--
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	2.2E+01	5.2E+00	na	2.2E+05	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	2.2E+05
DDD ^C	0	--	--	na	8.4E-03	--	--	na	8.4E-03	--	--	--	--	--	--	--	--	--	--	na	8.4E-03
DDE ^C	0	--	--	na	5.9E-03	--	--	na	5.9E-03	--	--	--	--	--	--	--	--	--	--	na	5.9E-03
DDT ^C	0	1.1E+00	1.0E-03	na	5.9E-03	1.1E+00	1.0E-03	na	5.9E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	5.9E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Dibenz(a,h)anthracene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
Dichloromethane (Methylene Chloride) ^C	0	--	--	na	1.6E+04	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
3,3-Dichlorobenzidine ^C	0	--	--	na	7.7E-01	--	--	na	7.7E-01	--	--	--	--	--	--	--	--	--	--	na	7.7E-01
Dichlorobromomethane ^C	0	--	--	na	4.6E+02	--	--	na	4.6E+02	--	--	--	--	--	--	--	--	--	--	na	4.6E+02
1,2-Dichloroethane ^C	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	1.4E+05	--	--	--	--	--	--	--	--	--	--	na	1.4E+05
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	7.9E+02	--	--	--	--	--	--	--	--	--	--	na	7.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane ^C	0	--	--	na	3.9E+02	--	--	na	3.9E+02	--	--	--	--	--	--	--	--	--	--	na	3.9E+02
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Dieldrin ^C	0	2.4E-01	5.6E-02	na	1.4E-03	2.4E-01	5.6E-02	na	1.4E-03	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	1.4E-03
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
Di-2-Ethylhexyl Phthalate ^C	0	--	--	na	5.9E+01	--	--	na	5.9E+01	--	--	--	--	--	--	--	--	--	--	na	5.9E+01
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	2.9E+06	--	--	--	--	--	--	--	--	--	--	na	2.9E+06
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	7.7E+02	--	--	--	--	--	--	--	--	--	--	na	7.7E+02
2,4-Dinitrotoluene ^C	0	--	--	na	9.1E+01	--	--	na	9.1E+01	--	--	--	--	--	--	--	--	--	--	na	9.1E+01
Dioxin (2,3,7,8- tetrachlorodibenzo-p- dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	--	--	--	--	--	--	--	--	na	na
1,2-Diphenylhydrazine ^C	0	--	--	na	5.4E+00	--	--	na	5.4E+00	--	--	--	--	--	--	--	--	--	--	na	5.4E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	2.4E+02	--	--	--	--	--	--	--	--	--	--	na	2.4E+02
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	8.6E-02	3.6E-02	na	8.1E-01	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	8.1E-01
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	8.1E-01	--	--	--	--	--	--	--	--	--	--	na	8.1E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
Fluorene	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor ^C	0	5.2E-01	3.8E-03	na	2.1E-03	5.2E-01	3.8E-03	na	2.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	2.1E-03
Heptachlor Epoxide ^C	0	5.2E-01	3.8E-03	na	1.1E-03	5.2E-01	3.8E-03	na	1.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	1.1E-03
Hexachlorobenzene ^C	0	--	--	na	7.7E-03	--	--	na	7.7E-03	--	--	--	--	--	--	--	--	--	--	na	7.7E-03
Hexachlorobutadiene ^C	0	--	--	na	5.0E+02	--	--	na	5.0E+02	--	--	--	--	--	--	--	--	--	--	na	5.0E+02
Hexachlorocyclohexane																					
Alpha-BHC ^C	0	--	--	na	1.3E-01	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	--	--	na	1.3E-01
Hexachlorocyclohexane																					
Beta-BHC ^C	0	--	--	na	4.6E-01	--	--	na	4.6E-01	--	--	--	--	--	--	--	--	--	--	na	4.6E-01
Hexachlorocyclohexane																					
Gamma-BHC ^C (Lindane)	0	9.5E-01	na	na	6.3E-01	9.5E-01	--	na	6.3E-01	--	--	--	--	--	--	--	--	9.5E-01	--	na	6.3E-01
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
Hexachloroethane ^C	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone ^C	0	--	--	na	2.6E+04	--	--	na	2.6E+04	--	--	--	--	--	--	--	--	--	--	na	2.6E+04
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	8.4E+01	9.5E+00	na	--	8.4E+01	9.5E+00	na	--	--	--	--	--	--	--	--	--	8.4E+01	9.5E+00	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.4E+00	7.7E-01	na	5.1E-02	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	na	5.1E-02
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04
Nickel	0	1.4E+02	1.6E+01	na	4.6E+03	1.4E+02	1.6E+01	na	4.6E+03	--	--	--	--	--	--	--	--	1.4E+02	1.6E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
N-Nitrosodimethylamine ^C	0	--	--	na	8.1E+01	--	--	na	8.1E+01	--	--	--	--	--	--	--	--	--	--	na	8.1E+01
N-Nitrosodiphenylamine ^C	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
N-Nitrosodi-n-propylamine ^C	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB-1016	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1221	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1232	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1242	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1248	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1254	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1260	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB Total ^C	0	--	--	na	1.7E-03	--	--	na	1.7E-03	--	--	--	--	--	--	--	--	--	--	na	1.7E-03

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol ^C	0	7.7E-03	5.9E-03	na	8.2E+01	7.7E-03	5.9E-03	na	8.2E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	na	8.2E+01
Phenol	0	--	--	na	4.6E+06	--	--	na	4.6E+06	--	--	--	--	--	--	--	--	--	--	na	4.6E+06
Pyrene	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity	0	--	--	na	1.5E+01	--	--	na	1.5E+01	--	--	--	--	--	--	--	--	--	--	na	1.5E+01
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	na	4.0E+00
Strontium-90	0	--	--	na	8.0E+00	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
Tritium	0	--	--	na	2.0E+04	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	--	--	na	2.0E+04
Selenium	0	2.0E+01	5.0E+00	na	1.1E+04	2.0E+01	5.0E+00	na	1.1E+04	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	1.1E+04
Silver	0	2.2E+00	--	na	--	2.2E+00	--	na	--	--	--	--	--	--	--	--	--	2.2E+00	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,1,2,2-Tetrachloroethane ^C	0	--	--	na	1.1E+02	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	1.1E+02
Tetrachloroethylene ^C	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Thallium	0	--	--	na	6.3E+00	--	--	na	6.3E+00	--	--	--	--	--	--	--	--	--	--	na	6.3E+00
Toluene	0	--	--	na	2.0E+05	--	--	na	2.0E+05	--	--	--	--	--	--	--	--	--	--	na	2.0E+05
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Toxaphene ^C	0	7.3E-01	2.0E-04	na	7.5E-03	7.3E-01	2.0E-04	na	7.5E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	7.5E-03
Tributyltin	0	4.6E-01	6.3E-02	na	--	4.6E-01	6.3E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	6.3E-02	na	--
1,2,4-Trichlorobenzene	0	--	--	na	9.4E+02	--	--	na	9.4E+02	--	--	--	--	--	--	--	--	--	--	na	9.4E+02
1,1,2-Trichloroethane ^C	0	--	--	na	4.2E+02	--	--	na	4.2E+02	--	--	--	--	--	--	--	--	--	--	na	4.2E+02
Trichloroethylene ^C	0	--	--	na	8.1E+02	--	--	na	8.1E+02	--	--	--	--	--	--	--	--	--	--	na	8.1E+02
2,4,6-Trichlorophenol ^C	0	--	--	na	6.5E+01	--	--	na	6.5E+01	--	--	--	--	--	--	--	--	--	--	na	6.5E+01
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Vinyl Chloride ^C	0	--	--	na	6.1E+01	--	--	na	6.1E+01	--	--	--	--	--	--	--	--	--	--	na	6.1E+01
Zinc	0	9.3E+01	9.4E+01	na	6.9E+04	9.3E+01	9.4E+01	na	6.9E+04	--	--	--	--	--	--	--	--	9.3E+01	9.4E+01	na	6.9E+04

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	4.3E+03
Arsenic	9.0E+01
Barium	na
Cadmium	5.5E-01
Chromium III	3.6E+01
Chromium VI	6.4E+00
Copper	4.2E+00
Iron	na
Lead	5.7E+00
Manganese	na
Mercury	5.1E-02
Nickel	9.6E+00
Selenium	3.0E+00
Silver	8.6E-01
Zinc	3.7E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: **Atlantic Research - Gainesville**

Permit No.: **VA0087700 - Outfall 002**

Receiving Stream: **Rocky Branch, UT**

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	mg/L
90% Temperature (Annual) =	deg C
90% Temperature (Wet season) =	deg C
90% Maximum pH =	SU
10% Maximum pH =	SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

Stream Flows

1Q10 (Annual) =	0 MGD
7Q10 (Annual) =	0 MGD
30Q10 (Annual) =	0 MGD
1Q10 (Wet season) =	0 MGD
30Q10 (Wet season) =	0 MGD
30Q5 =	0 MGD
Harmonic Mean =	0 MGD
Annual Average =	0 MGD

Mixing Information

Annual - 1Q10 Mix =	0 %
- 7Q10 Mix =	0 %
- 30Q10 Mix =	0 %
Wet Season - 1Q10 Mix =	0 %
- 30Q10 Mix =	0 %

Effluent Information

Mean Hardness (as CaCO3) =	141 mg/L
90% Temp (Annual) =	21.6 deg C
90% Temp (Wet season) =	deg C
90% Maximum pH =	7.3 SU
10% Maximum pH =	SU
Discharge Flow =	0.92 MGD

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	--	--	na	2.7E+03	--	--	na	2.7E+03	--	--	--	--	--	--	--	--	--	--	na	2.7E+03
Acrolein	0	--	--	na	7.8E+02	--	--	na	7.8E+02	--	--	--	--	--	--	--	--	--	--	na	7.8E+02
Acrylonitrile ^C	0	--	--	na	6.6E+00	--	--	na	6.6E+00	--	--	--	--	--	--	--	--	--	--	na	6.6E+00
Aldrin ^C	0	3.0E+00	--	na	1.4E-03	3.0E+00	--	na	1.4E-03	--	--	--	--	--	--	--	--	3.0E+00	--	na	1.4E-03
Ammonia-N (mg/l) (Yearly)	0	2.62E+01	3.22E+00	na	--	2.6E+01	3.2E+00	na	--	--	--	--	--	--	--	--	--	2.6E+01	3.2E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	2.62E+01	5.08E+00	na	--	2.6E+01	5.1E+00	na	--	--	--	--	--	--	--	--	--	2.6E+01	5.1E+00	na	--
Anthracene	0	--	--	na	1.1E+05	--	--	na	1.1E+05	--	--	--	--	--	--	--	--	--	--	na	1.1E+05
Antimony	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene ^C	0	--	--	na	7.1E+02	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	--	--	na	7.1E+02
Benzidine ^C	0	--	--	na	5.4E-03	--	--	na	5.4E-03	--	--	--	--	--	--	--	--	--	--	na	5.4E-03
Benzo (a) anthracene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (b) fluoranthene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (k) fluoranthene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (a) pyrene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Bis(2-Chloroethyl) Ether	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Bis(2-Chloroisopropyl) Ether	0	--	--	na	1.7E+05	--	--	na	1.7E+05	--	--	--	--	--	--	--	--	--	--	na	1.7E+05
Bromoform ^C	0	--	--	na	3.6E+03	--	--	na	3.6E+03	--	--	--	--	--	--	--	--	--	--	na	3.6E+03
Butylbenzylphthalate	0	--	--	na	5.2E+03	--	--	na	5.2E+03	--	--	--	--	--	--	--	--	--	--	na	5.2E+03
Cadmium	0	5.8E+00	1.5E+00	na	--	5.8E+00	1.5E+00	na	--	--	--	--	--	--	--	--	--	5.8E+00	1.5E+00	na	--
Carbon Tetrachloride ^C	0	--	--	na	4.4E+01	--	--	na	4.4E+01	--	--	--	--	--	--	--	--	--	--	na	4.4E+01
Chlordane ^C	0	2.4E+00	4.3E-03	na	2.2E-02	2.4E+00	4.3E-03	na	2.2E-02	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	2.2E-02
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane ^C	0	--	--	na	3.4E+02	--	--	na	3.4E+02	--	--	--	--	--	--	--	--	--	--	na	3.4E+02
Chloroform ^C	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	4.0E+02	--	--	--	--	--	--	--	--	--	--	na	4.0E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	7.5E+02	9.8E+01	na	--	7.5E+02	9.8E+01	na	--	--	--	--	--	--	--	--	--	7.5E+02	9.8E+01	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Copper	0	1.9E+01	1.2E+01	na	--	1.9E+01	1.2E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.2E+01	na	--
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	2.2E+01	5.2E+00	na	2.2E+05	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	2.2E+05
DDD ^C	0	--	--	na	8.4E-03	--	--	na	8.4E-03	--	--	--	--	--	--	--	--	--	--	na	8.4E-03
DDE ^C	0	--	--	na	5.9E-03	--	--	na	5.9E-03	--	--	--	--	--	--	--	--	--	--	na	5.9E-03
DDT ^C	0	1.1E+00	1.0E-03	na	5.9E-03	1.1E+00	1.0E-03	na	5.9E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	5.9E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Dibenz(a,h)anthracene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
Dichloromethane (Methylene Chloride) ^C	0	--	--	na	1.6E+04	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
3,3-Dichlorobenzidine ^C	0	--	--	na	7.7E-01	--	--	na	7.7E-01	--	--	--	--	--	--	--	--	--	--	na	7.7E-01
Dichlorobromomethane ^C	0	--	--	na	4.6E+02	--	--	na	4.6E+02	--	--	--	--	--	--	--	--	--	--	na	4.6E+02
1,2-Dichloroethane ^C	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	1.4E+05	--	--	--	--	--	--	--	--	--	--	na	1.4E+05
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	7.9E+02	--	--	--	--	--	--	--	--	--	--	na	7.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane ^C	0	--	--	na	3.9E+02	--	--	na	3.9E+02	--	--	--	--	--	--	--	--	--	--	na	3.9E+02
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Dieldrin ^C	0	2.4E-01	5.6E-02	na	1.4E-03	2.4E-01	5.6E-02	na	1.4E-03	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	1.4E-03
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
Di-2-Ethylhexyl Phthalate ^C	0	--	--	na	5.9E+01	--	--	na	5.9E+01	--	--	--	--	--	--	--	--	--	--	na	5.9E+01
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	2.9E+06	--	--	--	--	--	--	--	--	--	--	na	2.9E+06
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	7.7E+02	--	--	--	--	--	--	--	--	--	--	na	7.7E+02
2,4-Dinitrotoluene ^C	0	--	--	na	9.1E+01	--	--	na	9.1E+01	--	--	--	--	--	--	--	--	--	--	na	9.1E+01
Dioxin (2,3,7,8- tetrachlorodibenzo-p- dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	--	--	--	--	--	--	--	--	na	na
1,2-Diphenylhydrazine ^C	0	--	--	na	5.4E+00	--	--	na	5.4E+00	--	--	--	--	--	--	--	--	--	--	na	5.4E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	2.4E+02	--	--	--	--	--	--	--	--	--	--	na	2.4E+02
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	8.6E-02	3.6E-02	na	8.1E-01	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	8.1E-01
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	8.1E-01	--	--	--	--	--	--	--	--	--	--	na	8.1E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
Fluorene	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor ^C	0	5.2E-01	3.8E-03	na	2.1E-03	5.2E-01	3.8E-03	na	2.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	2.1E-03
Heptachlor Epoxide ^C	0	5.2E-01	3.8E-03	na	1.1E-03	5.2E-01	3.8E-03	na	1.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	1.1E-03
Hexachlorobenzene ^C	0	--	--	na	7.7E-03	--	--	na	7.7E-03	--	--	--	--	--	--	--	--	--	--	na	7.7E-03
Hexachlorobutadiene ^C	0	--	--	na	5.0E+02	--	--	na	5.0E+02	--	--	--	--	--	--	--	--	--	--	na	5.0E+02
Hexachlorocyclohexane																					
Alpha-BHC ^C	0	--	--	na	1.3E-01	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	--	--	na	1.3E-01
Hexachlorocyclohexane																					
Beta-BHC ^C	0	--	--	na	4.6E-01	--	--	na	4.6E-01	--	--	--	--	--	--	--	--	--	--	na	4.6E-01
Hexachlorocyclohexane																					
Gamma-BHC ^C (Lindane)	0	9.5E-01	na	na	6.3E-01	9.5E-01	--	na	6.3E-01	--	--	--	--	--	--	--	--	9.5E-01	--	na	6.3E-01
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
Hexachloroethane ^C	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone ^C	0	--	--	na	2.6E+04	--	--	na	2.6E+04	--	--	--	--	--	--	--	--	--	--	na	2.6E+04
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	1.8E+02	2.1E+01	na	--	1.8E+02	2.1E+01	na	--	--	--	--	--	--	--	--	--	1.8E+02	2.1E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.4E+00	7.7E-01	na	5.1E-02	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	na	5.1E-02
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04
Nickel	0	2.4E+02	2.7E+01	na	4.6E+03	2.4E+02	2.7E+01	na	4.6E+03	--	--	--	--	--	--	--	--	2.4E+02	2.7E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
N-Nitrosodimethylamine ^C	0	--	--	na	8.1E+01	--	--	na	8.1E+01	--	--	--	--	--	--	--	--	--	--	na	8.1E+01
N-Nitrosodiphenylamine ^C	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
N-Nitrosodi-n-propylamine ^C	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB-1016	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1221	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1232	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1242	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1248	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1254	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1260	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB Total ^C	0	--	--	na	1.7E-03	--	--	na	1.7E-03	--	--	--	--	--	--	--	--	--	--	na	1.7E-03

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol ^C	0	7.7E-03	5.9E-03	na	8.2E+01	7.7E-03	5.9E-03	na	8.2E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	na	8.2E+01
Phenol	0	--	--	na	4.6E+06	--	--	na	4.6E+06	--	--	--	--	--	--	--	--	--	--	na	4.6E+06
Pyrene	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity	0	--	--	na	1.5E+01	--	--	na	1.5E+01	--	--	--	--	--	--	--	--	--	--	na	1.5E+01
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	na	4.0E+00
Strontium-90	0	--	--	na	8.0E+00	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
Tritium	0	--	--	na	2.0E+04	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	--	--	na	2.0E+04
Selenium	0	2.0E+01	5.0E+00	na	1.1E+04	2.0E+01	5.0E+00	na	1.1E+04	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	1.1E+04
Silver	0	6.2E+00	--	na	--	6.2E+00	--	na	--	--	--	--	--	--	--	--	--	6.2E+00	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,1,2,2-Tetrachloroethane ^C	0	--	--	na	1.1E+02	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	1.1E+02
Tetrachloroethylene ^C	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Thallium	0	--	--	na	6.3E+00	--	--	na	6.3E+00	--	--	--	--	--	--	--	--	--	--	na	6.3E+00
Toluene	0	--	--	na	2.0E+05	--	--	na	2.0E+05	--	--	--	--	--	--	--	--	--	--	na	2.0E+05
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Toxaphene ^C	0	7.3E-01	2.0E-04	na	7.5E-03	7.3E-01	2.0E-04	na	7.5E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	7.5E-03
Tributyltin	0	4.6E-01	6.3E-02	na	--	4.6E-01	6.3E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	6.3E-02	na	--
1,2,4-Trichlorobenzene	0	--	--	na	9.4E+02	--	--	na	9.4E+02	--	--	--	--	--	--	--	--	--	--	na	9.4E+02
1,1,2-Trichloroethane ^C	0	--	--	na	4.2E+02	--	--	na	4.2E+02	--	--	--	--	--	--	--	--	--	--	na	4.2E+02
Trichloroethylene ^C	0	--	--	na	8.1E+02	--	--	na	8.1E+02	--	--	--	--	--	--	--	--	--	--	na	8.1E+02
2,4,6-Trichlorophenol ^C	0	--	--	na	6.5E+01	--	--	na	6.5E+01	--	--	--	--	--	--	--	--	--	--	na	6.5E+01
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Vinyl Chloride ^C	0	--	--	na	6.1E+01	--	--	na	6.1E+01	--	--	--	--	--	--	--	--	--	--	na	6.1E+01
Zinc	0	1.6E+02	1.6E+02	na	6.9E+04	1.6E+02	1.6E+02	na	6.9E+04	--	--	--	--	--	--	--	--	1.6E+02	1.6E+02	na	6.9E+04

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	4.3E+03
Arsenic	9.0E+01
Barium	na
Cadmium	8.9E-01
Chromium III	5.9E+01
Chromium VI	6.4E+00
Copper	7.2E+00
Iron	na
Lead	1.3E+01
Manganese	na
Mercury	5.1E-02
Nickel	1.6E+01
Selenium	3.0E+00
Silver	2.5E+00
Zinc	6.3E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

DMR QA/QC

Permit #:VA0087700	Facility:Atlantic Research Corporation - Gainesville former
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Outfall	Rec'd	Parameter Description	QTY AVG	Lim Avg	QTY MAX	Lim Max	CONC MIN	Lim Min	CONC AVG	Lim Avg	CONC MAX	Lim Max
001	12-Jan-2004	FLOW	1.345	NL	1.345	NL	NULL	*****	NULL	*****	NULL	*****
001	12-Apr-2004	FLOW	1.96	NL	1.96	NL	NULL	*****	NULL	*****	NULL	*****
001	12-Jul-2004	FLOW	2.24	NL	2.24	NL	NULL	*****	NULL	*****	NULL	*****
001	12-Oct-2004	FLOW	1.68	NL	1.68	NL	NULL	*****	NULL	*****	NULL	*****
001	11-Jan-2005	FLOW	1.96	NL	1.96	NL	NULL	*****	NULL	*****	NULL	*****
001	12-Apr-2005	FLOW	2.52	NL	2.52	NL	NULL	*****	NULL	*****	NULL	*****
001	11-Jul-2005	FLOW	0.285	NL	0.285	NL	NULL	*****	NULL	*****	NULL	*****
001	13-Oct-2005	FLOW	0.843	NL	0.843	NL	NULL	*****	NULL	*****	NULL	*****
001	05-Jan-2006	FLOW	0.2853	NL	0.2853	NL	NULL	*****	NULL	*****	NULL	*****
001	10-Apr-2006	FLOW	12.37	NL	12.37	NL	NULL	*****	NULL	*****	NULL	*****
001	10-Jul-2006	FLOW	3.1834	NL	3.1834	NL	NULL	*****	NULL	*****	NULL	*****
001	10-Oct-2006	FLOW	5.523	NL	5.523	NL	NULL	*****	NULL	*****	NULL	*****
001	10-Jan-2007	FLOW	36.78	NL	36.78	NL	NULL	*****	NULL	*****	NULL	*****
001	04-Apr-2007	FLOW	29.1	NL	29.1	NL	NULL	*****	NULL	*****	NULL	*****
001	10-Jul-2007	FLOW	1.46	NL	1.46	NL	NULL	*****	NULL	*****	NULL	*****
001	09-Oct-2007	FLOW	1.46	NL	1.46	NL	NULL	*****	NULL	*****	NULL	*****
001	10-Jan-2008	FLOW	3.1	NL	5.52	NL	NULL	*****	NULL	*****	NULL	*****
001	08-Apr-2008	FLOW	5.5	NL	5.5	NL	NULL	*****	NULL	*****	NULL	*****
001	09-Oct-2008	FLOW	4.28	NL	4.28	NL	NULL	*****	NULL	*****	NULL	*****
001	12-Jul-2004	NOAEC - ACUTE 48 HR STAT CERIODAPHNIA DUBIA	NULL	*****	NULL	*****	NULL	*****	NULL	*****	<1.00	NL
001	13-Oct-2005	NOAEC - ACUTE 48 HR STAT CERIODAPHNIA DUBIA	NULL	*****	NULL	*****	NULL	*****	NULL	*****	<1.00	NL
001	12-Dec-2006	NOAEC - ACUTE 48 HR STAT CERIODAPHNIA DUBIA	NULL	*****	NULL	*****	NULL	*****	NULL	*****	<1.00	NL
001	10-Jan-2008	NOAEC - ACUTE 48 HR STAT CERIODAPHNIA DUBIA	NULL	*****	NULL	*****	NULL	*****	NULL	*****	<1.0	NL
001	12-Jul-2004	NOAEC - ACUTE 48 HR STAT PIMEPHALES PROMELAS	NULL	*****	NULL	*****	NULL	*****	NULL	*****	<1.00	NL
001	13-Oct-2005	NOAEC - ACUTE 48 HR STAT PIMEPHALES PROMELAS	NULL	*****	NULL	*****	NULL	*****	NULL	*****	<1.00	NL

001	12-Dec-2006	NOAEC - ACUTE 48 HR STAT PIMEPHALES PROMELAS	NULL	*****	NULL	*****	NULL	*****	NULL	*****	<1.00	NL
001	10-Jan-2008	NOAEC - ACUTE 48 HR STAT PIMEPHALES PROMELAS	NULL	*****	NULL	*****	NULL	*****	NULL	*****	<1.0	NL
001	12-Jan-2004	PH	NULL	*****	NULL	*****	7.1	6.0	NULL	*****	7.1	9.0
001	12-Apr-2004	PH	NULL	*****	NULL	*****	7.51	6.0	NULL	*****	7.51	9.0
001	12-Jul-2004	PH	NULL	*****	NULL	*****	7.31	6.0	NULL	*****	7.31	9.0
001	12-Oct-2004	PH	NULL	*****	NULL	*****	7.25	6.0	NULL	*****	7.25	9.0
001	11-Jan-2005	PH	NULL	*****	NULL	*****	7.17	6.0	NULL	*****	7.17	9.0
001	12-Apr-2005	PH	NULL	*****	NULL	*****	7.42	6.0	NULL	*****	7.42	9.0
001	11-Jul-2005	PH	NULL	*****	NULL	*****	6.81	6.0	NULL	*****	6.81	9.0
001	13-Oct-2005	PH	NULL	*****	NULL	*****	6.95	6.0	NULL	*****	6.95	9.0
001	05-Jan-2006	PH	NULL	*****	NULL	*****	7.22	6.0	NULL	*****	7.22	9.0
001	10-Apr-2006	PH	NULL	*****	NULL	*****	6.75	6.0	NULL	*****	6.75	9.0
001	10-Jul-2006	PH	NULL	*****	NULL	*****	7.22	6.0	NULL	*****	7.22	9.0
001	10-Oct-2006	PH	NULL	*****	NULL	*****	7.42	6.0	NULL	*****	7.42	9.0
001	10-Jan-2007	PH	NULL	*****	NULL	*****	6.83	6.0	NULL	*****	6.83	9.0
001	04-Apr-2007	PH	NULL	*****	NULL	*****	7.2	6.0	NULL	*****	7.2	9.0
001	10-Jul-2007	PH	NULL	*****	NULL	*****	7.4	6.0	NULL	*****	7.4	9.0
001	09-Oct-2007	PH	NULL	*****	NULL	*****	7.4	6.0	NULL	*****	7.4	9.0
001	10-Jan-2008	PH	NULL	*****	NULL	*****	7.6	6.0	NULL	*****	7.6	9.0
001	08-Apr-2008	PH	NULL	*****	NULL	*****	7.5	6.0	NULL	*****	7.5	9.0
001	09-Oct-2008	PH	NULL	*****	NULL	*****	7.21	6.0	NULL	*****	7.21	9.0
001	12-Jan-2004	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	14.3	32
001	12-Apr-2004	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	0.5	32
001	12-Jul-2004	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	28.8	32
001	12-Oct-2004	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	27.6	32
001	11-Jan-2005	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	17.4	32
001	12-Apr-2005	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	18.1	32
001	11-Jul-2005	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	18.6	32
001	13-Oct-2005	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	22.4	32
001	05-Jan-2006	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	18.9	32
001	10-Apr-2006	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	3.9	32
001	10-Jul-2006	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	17.0	32
001	10-Oct-2006	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	16.0	32
001	10-Jan-2007	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	16.4	32

001	04-Apr-2007	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	9.1	32
001	10-Jul-2007	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	24.2	32
001	10-Jan-2008	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	15.8	32
001	08-Apr-2008	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	2.71	32
001	09-Oct-2008	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	25.0	32
002	12-Jan-2004	COPPER, DISSOLVED (UG/L AS CU)	NULL	*****	NULL	*****	NULL	*****	6.55	NL	6.55	NL
002	12-Apr-2004	COPPER, DISSOLVED (UG/L AS CU)	NULL	*****	NULL	*****	NULL	*****	1.50	NL	1.50	NL
002	12-Jul-2004	COPPER, DISSOLVED (UG/L AS CU)	NULL	*****	NULL	*****	NULL	*****	3.36	NL	3.36	NL
002	12-Oct-2004	COPPER, DISSOLVED (UG/L AS CU)	NULL	*****	NULL	*****	NULL	*****	1.93	NL	1.93	NL
002	11-Jan-2005	COPPER, DISSOLVED (UG/L AS CU)	NULL	*****	NULL	*****	NULL	*****	4.04	NL	4.04	NL
002	12-Apr-2005	COPPER, DISSOLVED (UG/L AS CU)	NULL	*****	NULL	*****	NULL	*****	5.40	NL	5.40	NL
002	11-Jul-2005	COPPER, DISSOLVED (UG/L AS CU)	NULL	*****	NULL	*****	NULL	*****	1.24	NL	1.24	NL
002	05-Jan-2006	COPPER, DISSOLVED (UG/L AS CU)	NULL	*****	NULL	*****	NULL	*****	65.7	NL	65.7	NL
002	10-Apr-2006	COPPER, DISSOLVED (UG/L AS CU)	NULL	*****	NULL	*****	NULL	*****	9.8	NL	9.8	NL
002	10-Jul-2006	COPPER, DISSOLVED (UG/L AS CU)	NULL	*****	NULL	*****	NULL	*****	8.2	NL	8.2	NL
002	10-Oct-2006	COPPER, DISSOLVED (UG/L AS CU)	NULL	*****	NULL	*****	NULL	*****	34.1	NL	34.1	NL
002	10-Jan-2007	COPPER, DISSOLVED (UG/L AS CU)	NULL	*****	NULL	*****	NULL	*****	63.8	NL	63.8	NL
002	10-Jan-2008	COPPER, DISSOLVED (UG/L AS CU)	NULL	*****	NULL	*****	NULL	*****	6.2	NL	6.2	NL
002	08-Apr-2008	COPPER, DISSOLVED (UG/L AS CU)	NULL	*****	NULL	*****	NULL	*****	5.7	NL	5.7	NL
002	09-Oct-2008	COPPER, DISSOLVED (UG/L AS CU)	NULL	*****	NULL	*****	NULL	*****	18.8	NL	18.8	NL
002	12-Jan-2004	FLOW	0.0021	NL	0.0021	NL	NULL	*****	NULL	*****	NULL	*****
002	12-Apr-2004	FLOW	0.00012	NL	0.00012	NL	NULL	*****	NULL	*****	NULL	*****
002	12-Jul-2004	FLOW	0.00012	NL	0.00012	NL	NULL	*****	NULL	*****	NULL	*****
002	12-Oct-2004	FLOW	0.00024	NL	0.00024	NL	NULL	*****	NULL	*****	NULL	*****
002	11-Jan-2005	FLOW	.00024	NL	.00024	NL	NULL	*****	NULL	*****	NULL	*****
002	12-Apr-2005	FLOW	0.00036	NL	0.00036	NL	NULL	*****	NULL	*****	NULL	*****
002	11-Jul-2005	FLOW	0.0028	NL	0.0028	NL	NULL	*****	NULL	*****	NULL	*****
002	13-Oct-2005	FLOW	0.0028	NL	0.0028	NL	NULL	*****	NULL	*****	NULL	*****
002	14-Nov-2005	FLOW	0.0028	NL	0.0028	NL	NULL	*****	NULL	*****	NULL	*****
002	05-Jan-2006	FLOW	0.0028	NL	0.0028	NL	NULL	*****	NULL	*****	NULL	*****
002	10-Apr-2006	FLOW	0.395	NL	0.395	NL	NULL	*****	NULL	*****	NULL	*****
002	10-Jul-2006	FLOW	0.0125	NL	0.0125	NL	NULL	*****	NULL	*****	NULL	*****
002	10-Oct-2006	FLOW	0.395	NL	0.395	NL	NULL	*****	NULL	*****	NULL	*****
002	10-Jan-2007	FLOW	1.66	NL	1.66	NL	NULL	*****	NULL	*****	NULL	*****
002	04-Apr-2007	FLOW	5.52	NL	5.52	NL	NULL	*****	NULL	*****	NULL	*****

002	10-Jan-2008	FLOW	1.66	NL	1.66	NL	NULL	*****	NULL	*****	NULL	*****
002	08-Apr-2008	FLOW	0.40	NL	0.40	NL	NULL	*****	NULL	*****	NULL	*****
002	09-Oct-2008	FLOW	0.92	NL	0.92	NL	NULL	*****	NULL	*****	NULL	*****
002	12-Jan-2004	HARDNESS, TOTAL (AS CACO3)	NULL	*****	NULL	*****	NULL	*****	111.0	NL	NULL	*****
002	12-Apr-2004	HARDNESS, TOTAL (AS CACO3)	NULL	*****	NULL	*****	NULL	*****	221	NL	NULL	*****
002	12-Oct-2004	HARDNESS, TOTAL (AS CACO3)	NULL	*****	NULL	*****	NULL	*****	238	NL	NULL	*****
002	11-Jan-2005	HARDNESS, TOTAL (AS CACO3)	NULL	*****	NULL	*****	NULL	*****	151	NL	NULL	*****
002	12-Apr-2005	HARDNESS, TOTAL (AS CACO3)	NULL	*****	NULL	*****	NULL	*****	131	NL	NULL	*****
002	11-Jul-2005	HARDNESS, TOTAL (AS CACO3)	NULL	*****	NULL	*****	NULL	*****	301	NL	NULL	*****
002	05-Jan-2006	HARDNESS, TOTAL (AS CACO3)	NULL	*****	NULL	*****	NULL	*****	61.2	NL	NULL	*****
002	10-Apr-2006	HARDNESS, TOTAL (AS CACO3)	NULL	*****	NULL	*****	NULL	*****	48.4	NL	NULL	*****
002	10-Jul-2006	HARDNESS, TOTAL (AS CACO3)	NULL	*****	NULL	*****	NULL	*****	291	NL	NULL	*****
002	10-Oct-2006	HARDNESS, TOTAL (AS CACO3)	NULL	*****	NULL	*****	NULL	*****	52.9	NL	NULL	*****
002	10-Jan-2007	HARDNESS, TOTAL (AS CACO3)	NULL	*****	NULL	*****	NULL	*****	65.7	NL	NULL	*****
002	10-Jan-2008	HARDNESS, TOTAL (AS CACO3)	NULL	*****	NULL	*****	NULL	*****	169	NL	NULL	*****
002	08-Apr-2008	HARDNESS, TOTAL (AS CACO3)	NULL	*****	NULL	*****	NULL	*****	92.1	NL	NULL	*****
002	09-Oct-2008	HARDNESS, TOTAL (AS CACO3)	NULL	*****	NULL	*****	NULL	*****	38.1	NL	NULL	*****
002	12-Jul-2004	NOAEC - ACUTE 48 HR STAT CERIODAPHNIA DUBIA	NULL	*****	NULL	*****	NULL	*****	NULL	*****	<1.00	NL
002	13-Oct-2005	NOAEC - ACUTE 48 HR STAT CERIODAPHNIA DUBIA	NULL	*****	NULL	*****	NULL	*****	NULL	*****	<1.00	NL
002	12-Dec-2006	NOAEC - ACUTE 48 HR STAT CERIODAPHNIA DUBIA	NULL	*****	NULL	*****	NULL	*****	NULL	*****	<1.00	NL
002	10-Jan-2008	NOAEC - ACUTE 48 HR STAT CERIODAPHNIA DUBIA	NULL	*****	NULL	*****	NULL	*****	NULL	*****	<1.0	NL
002	12-Jul-2004	NOAEC - ACUTE 48 HR STAT PIMEPHALES PROMELAS	NULL	*****	NULL	*****	NULL	*****	NULL	*****	<1.00	NL
002	13-Oct-2005	NOAEC - ACUTE 48 HR STAT PIMEPHALES PROMELAS	NULL	*****	NULL	*****	NULL	*****	NULL	*****	<1.00	NL
002	12-Dec-2006	NOAEC - ACUTE 48 HR STAT PIMEPHALES PROMELAS	NULL	*****	NULL	*****	NULL	*****	NULL	*****	<1.00	NL
002	10-Jan-2008	NOAEC - ACUTE 48 HR STAT PIMEPHALES PROMELAS	NULL	*****	NULL	*****	NULL	*****	NULL	*****	<1.0	NL
002	12-Jan-2004	PH	NULL	*****	NULL	*****	6.2	6.0	NULL	*****	6.2	9.0
002	12-Apr-2004	PH	NULL	*****	NULL	*****	6.64	6.0	NULL	*****	6.64	9.0
002	12-Jul-2004	PH	NULL	*****	NULL	*****	6.88	6.0	NULL	*****	7.19	9.0
002	12-Oct-2004	PH	NULL	*****	NULL	*****	8.25	6.0	NULL	*****	8.25	9.0
002	11-Jan-2005	PH	NULL	*****	NULL	*****	6.90	6.0	NULL	*****	6.90	9.0

002	12-Apr-2005	PH	NULL	*****	NULL	*****	6.92	6.0	NULL	*****	6.92	9.0
002	11-Jul-2005	PH	NULL	*****	NULL	*****	6.88	6.0	NULL	*****	6.88	9.0
002	13-Oct-2005	PH	NULL	*****	NULL	*****	6.82	6.0	NULL	*****	6.82	9.0
002	14-Nov-2005	PH	NULL	*****	NULL	*****	6.82	6.0	NULL	*****	6.82	9.0
002	05-Jan-2006	PH	NULL	*****	NULL	*****	6.33	6.0	NULL	*****	6.33	9.0
002	10-Apr-2006	PH	NULL	*****	NULL	*****	7.21	6.0	NULL	*****	7.21	9.0
002	10-Jul-2006	PH	NULL	*****	NULL	*****	7.36	6.0	NULL	*****	7.36	9.0
002	10-Oct-2006	PH	NULL	*****	NULL	*****	6.78	6.0	NULL	*****	6.78	9.0
002	10-Jan-2007	PH	NULL	*****	NULL	*****	6.66	6.0	NULL	*****	6.66	9.0
002	04-Apr-2007	PH	NULL	*****	NULL	*****	7.1	6.0	NULL	*****	7.1	9.0
002	10-Jan-2008	PH	NULL	*****	NULL	*****	7.0	6.0	NULL	*****	7.0	9.0
002	08-Apr-2008	PH	NULL	*****	NULL	*****	6.8	6.0	NULL	*****	6.8	9.0
002	09-Oct-2008	PH	NULL	*****	NULL	*****	6.1	6.0	NULL	*****	6.1	9.0
002	12-Jan-2004	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	14.6	32
002	12-Apr-2004	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	3.0	32
002	12-Jul-2004	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	21.6	32
002	12-Oct-2004	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	28.5	32
002	11-Jan-2005	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	8.8	32
002	12-Apr-2005	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	5.0	32
002	11-Jul-2005	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	16.9	32
002	13-Oct-2005	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	20.9	32
002	14-Nov-2005	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	20.9	32
002	05-Jan-2006	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	19.2	32
002	10-Apr-2006	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	3.5	32
002	10-Jul-2006	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	16.9	32
002	10-Oct-2006	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	15.6	32
002	10-Jan-2007	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	15.9	32
002	04-Apr-2007	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	7.3	32
002	10-Jan-2008	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	11.15	32
002	08-Apr-2008	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	4.71	32
002	09-Oct-2008	TEMPERATURE, WATER (DEG. C)	NULL	*****	NULL	*****	NULL	*****	NULL	*****	21.6	32

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY

Northern Regional Office

13901 Crown Court

Woodbridge, VA 22192

(703) 538-3800

SUBJECT: TOXICS MANAGEMENT PROGRAM DATA REVIEW
Atlantic Research Corporation - Gainesville (VA0087700)
REVIEWER: Douglas Frasier
DATE: 13 November 2008
COPIES: TMP file

PREVIOUS REVIEW: 28 February 2008

DATA REVIEWED:

This review covers the fifth annual acute toxicity tests conducted in July 2008 for Outfall 001 and Outfall 002. The test was performed on *C. dubia* and *P. promelas* using grab samples of effluent collected from the outfall.

DISCUSSION:

The results of this acute toxicity tests along with the results of previous toxicity tests conducted on the effluent samples collected from Outfall 001 and Outfall 002 are summarized in Table 1 and Table 2, respectively.

The acute toxicity was determined with a 48-hour acute toxicity test performed on *C. dubia* and *P. promelas*. The acute toxicity tests yielded a no-observed-effect-concentration (NOEC) of 100% effluent, equal to the instream waste concentration of 100%; thus passing the acute toxicity criterion.

RECOMMENDATIONS:

The permittee should continue biomonitoring of the discharge with annual acute toxicity testing in accordance with the TMP requirements of the permit.

FACILITY INFORMATION

FACILITY: Atlantic Research Corporation - Gainesville Facility

LOCATION: On State Route 674, 1.5 miles southeast of I-66
Gainesville, Prince William County, Virginia

VPDES#: VA0087700

TYPE OF FACILITY: Industrial, minor

REGION/PERMIT WRITER: NRO / Anna Westernnik

PERMIT EFFECTIVE DATE: 12 November 2003

SIC CODE/DESCRIPTION: 3764 / Guided Missile Propulsion Units and Parts
3499 / Fabricated Metal Products

TREATMENT:

Outfall 001

Stormwater and Internal Outfalls 101-111: volatilization through dams and rip rap beds

Groundwater treatment system effluent: pre-chlorination, air stripping

Boiler blowdown, Buildings 29 & 46: cooling and pH neutralization

Water softener and gravel filter backwash: sedimentation basin and bag filter

Precipitation and condensate near Buildings 40 & 28: collection sump and activated carbon
adsorption

Outfall 002

Stormwater and non-contact cooling water: volatilization through rip rap beds

OUTFALLS/FLOWS (MAX): Outfall 001: 2.5 MGD*
Outfall 002: 0.0098 MGD*

RECEIVING STREAM/7Q10/IWC: Rocky Branch, UT; Potomac River Basin and Subbasin;
Section 7a; Class III; Special Standards g;
7Q10: 0.0 MGD
IWC: 100% (@ outfall 001)

TMP EFFECTIVE DATE: 12 February 1994

TMP REQUIREMENTS: Biological Monitoring

The permittee is required to conduct annual acute toxicity tests using grab samples from Outfall 001 and Outfall 002. The tests shall be a 48-hour test using *C. dubia* and *P. promelas* species. If annual acute toxicity test yields a LC₅₀ of less than 100% effluent, the test shall be repeated in 3 months.

*based on actual quarterly estimates for the period of July 2001 through April 2003 as reported in the Discharge Monitoring Reports (DMRs)

BIOMONITORING RESULTS

Atlantic Research Corporation – Gainesville (VA0087700)

Table 1
Summary of Toxicity Test Results for Outfall 001

TEST DATE	TEST TYPE/ORGANISM	LC ₅₀ (%)	NOEC (%)	% SURV	IC25 %	LAB	REMARKS
01/26/94	Acute <i>C. dubia</i>	>100		85		ESS	SA-1
01/26/94	Acute <i>P. promelas</i>	>100		95		ESS	
02/15/94	Chronic <i>C. dubia</i>		25 R	100		ESS	QT-1
02/15/94	Chronic <i>P. promelas</i>		50 SG	60		ESS	
05/11/94	Chronic <i>C. dubia</i>		100 SR	100		ESS	QT-2
05/11/94	Chronic <i>P. promelas</i>		100 SG	90		ESS	
08/23/94	Chronic <i>C. dubia</i>		100 SR	100		ESS	QT-3
08/23/94	Chronic <i>P. promelas</i>		100 SG	85		ESS	
10/27/94	Acute <i>C. dubia</i>	>100		100		ESS	SA-2
10/27/94	Acute <i>P. promelas</i>	>100		100		ESS	
11/01/94	Chronic <i>C. dubia</i>		100 SR	100		ESS	QT-4
11/01/94	Chronic <i>P. promelas</i>		100 SG	80		ESS	
03/01/95	Chronic <i>C. dubia</i>		INV			ESS	AN-1
03/01/95	Chronic <i>P. promelas</i>		100 SG	75		ESS	
05/01/95	Acute <i>C. dubia</i>	>100		100		ESS	SA-3
05/01/95	Acute <i>P. promelas</i>	>100		100		ESS	
10/28/95	Acute <i>C. dubia</i>	>100		90		CBI	SA-4
10/28/95	Acute <i>P. promelas</i>	>100		100		CBI	
02/28/96	Chronic <i>P. promelas</i>		100 SG	85		CBI	AN-2
05/16/96	Acute <i>C. dubia</i>	>100		95		CBI	
08/29/97	Chronic <i>C. dubia</i>		100 SR	100		CBI	AN-3
10/5/97	Chronic <i>P. promelas</i>		50 SG	100		CBI	
09/30/97	Acute <i>C. dubia</i>	>100		100		CBI	
02/05/98	Acute <i>C. dubia</i>	>100		100		CBI	AN-4
3/36/98	Chronic <i>P. promelas</i>		12.5 SG	50		CBI	retest
7/22/98	Chronic <i>P. promelas</i>		100 SG	100		CBI	quarterly test resumed
7/22/98	Chronic <i>C. dubia</i>		100 SR	100		CBI	
0/16/98	Chronic <i>P. promelas</i>		50 SG	78		CBI	
0/16/98	Chronic <i>C. dubia</i>		100 SR	100		CBI	
Reissued Permit Effective November 12, 1998							
Outfall 001A substitutes for Outfall 001							
5/25/99	Acute <i>C. dubia</i>	>100		100		CBI	1st annual
6/09/99 [#]	Chronic <i>P. promelas</i>		100 SG	100		CBI	1st quarterly
8/06/99 [#]	Chronic <i>P. promelas</i>		100 SG	100		CBI	2nd quarterly

TEST DATE	TEST TYPE/ORGANISM	LC ₅₀ (%)	NOEC (%)	% SURV	IC25 %	LAB	REMARKS
11/9/99 [#]	Chronic <i>P. promelas</i>		100 SG	95		CBI	3 rd quarterly
4/26/00	Acute <i>C. dubia</i>	>100		100		CBI	2 nd annual
5/09/00 [#]	Chronic <i>P. promelas</i>		100 SG	95		CBI	4th quarterly
8/22/00 [#]	Chronic <i>P. promelas</i>		100 SG	98		CBI	1st annual
1/09/01 [#]	Chronic <i>P. promelas</i>	>100	100 SG	93	>100	CBI	2nd annual
3/30/01	Acute <i>C. dubia</i>	>100		100		CBI	3rd annual
6/14/02	Acute <i>C. dubia</i>	>100		100		CBI	4th annual
7/31/02 [#]	Chronic <i>P. promelas</i>	>100	100 SG	95	>100	CBI	3rd annual
9/9/03 [#]	Chronic <i>P. promelas</i>	>100	100 SG	73	>100	CBI	4th annual
Permit Reissued 12 November 2003							
5/27/04	Acute <i>C. dubia</i>	>100		90		CBI	1 st annual
5/27/04	Acute <i>P. promelas</i>	>100		100		CBI	
10/13/05	Acute <i>C. dubia</i>	>100		100		CBI	2 nd annual
10/13/05	Acute <i>P. promelas</i>	>100		100		CBI	
9/15/06	Acute <i>C. dubia</i>	>100		100		CBI	3 rd annual
9/15/06	Acute <i>P. promelas</i>	>100		100		CBI	
11/16/07	Acute <i>C. dubia</i>	>100		95		TA	4 th annual
11/16/07	Acute <i>P. promelas</i>	>100		100		TA	
07/23/08	Acute <i>C. dubia</i>	>100		95		TA	5 th annual
07/23/08	Acute <i>P. promelas</i>	>100		100		TA	

Table 2
Summary of Toxicity Test Results for Outfall 002

TEST DATE	TEST TYPE/ORGANISM	LC ₅₀ (%)	NOEC (%)	% SURV	IC25 %	LAB	REMARKS
5/27/04	Acute <i>C. dubia</i>	>100		95		CBI	1 st annual
5/27/04	Acute <i>P. promelas</i>	>100		95		CBI	
11/16/07	Acute <i>C. dubia</i>	>100		80		TA	4 th annual
11/16/07	Acute <i>P. promelas</i>	>100		90		TA	
07/25/08	Acute <i>C. dubia</i>	>100		100		CBI	5 th annual
07/25/08	Acute <i>P. promelas</i>	>100		95		CBI	

FOOTNOTES:

* Test included in the current data review.

A **bold faced value** for LC₅₀ or NOEC indicates that the test failed the criteria.

Samples pretreated with UV disinfection to keep fish pathogens from interfering with the test outcome. See review memo dated August 31, 1999.

ABBREVIATIONS:

S - Survival; G - Growth; R - Reproduction

SA-1, 2, 3, or 4 - 1st, 2nd, 3rd, or 4th Semiannual;

QT-1, 2, 3, or 4 - 1st, 2nd, 3rd, or 4th Quarterly;

AN-1, or 2 - 1st or 2nd Annual; INV - Invalid test;

% SURV - Percent survival in 100% effluent

ESS - Environmental Systems Service, Ltd.

CBI - Coastal Bioanalysts, Inc.

TA - Test America

ACUTE TEST DATA REVIEW CHECKLIST

Revised July 16, 2008

Referencing "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms",
Fifth Edition, EPA 821-R-02-012, October 2002

Permit Number: VA0087700

Outfall: 001

Permittee: ARC Gainesville

Test Date: 07/23/08

Period Reviewed: QT SA AN X Other:
1st 2nd 3rd 4th
5th X 6th 7th 8th

Testing Laboratory: Test America

#	ACUTE DATA PARAMETER - (Some are organism specific)	YES	NO	Manual or Permit Req.
1.	Was the test performed as per schedule?	X		Permit
2.	Was the correct test performed?	X		Permit
3.	Was the correct type of sample used?	X		Permit
4.	Was the chain of custody form supplied with the test report?	X		VA DEQ guidance
5.	Were pH, temp, Cl of sample checked at sample site (or within 15 minutes of sample retrieval)?	X		VA DEQ guidance
6.	If the sample was collected for off-site toxicity testing, was it held at 0-6° C during collection (composite) or chilled immediately following collection (grab)?	X		8.5.7.1
7.	Was the sample packed in ice and chilled to 0-6° C for transport to an off-site toxicity testing facility? NOTE: Frozen samples are not valid! NOTE: An exception to this would be for samples that are delivered for same day testing that may not have a chance to cool to this temperature range.	X		8.5.1, 8.5.7.1
8.	Were temperature and sample description recorded upon receipt by the lab?	X		8.6.1
9.	Does description (visual, obvious scent) of sample (when received at lab) seem typical for this type of facility?	X		VA DEQ guidance
10.	Was the test initiated within 36 hours of sample retrieval from sampler? NOTE: In isolated cases, an extension to this holding time can be allowed by VA DEQ (CO). Documentation of this permission must be presented with the test report and include the supportive data mentioned in 8.5.4 and 8.7.1	X		8.5.4, 8.6.2, and 8.7.1
11.	If filtration was necessary to remove debris or indigenous organisms, was a sieve with =60 µm mesh openings used?	NA		7.3.5
12.	a. Was the sample DO ≥ 4.0 mg/l and ≤ saturation at 25° C prior to test initiation? (applies to <i>C. dubia</i> , <i>P. promelas</i>) b. Was the sample DO ≥ 4.0 mg/l and ≤ saturation at 25° C at 20 ppt salinity prior to test initiation? (applies to <i>A. bahia</i> , <i>C. variegatus</i>) c. Was the sample DO ≥ 6.0 mg/l and ≤ saturation at 12° C prior to test initiation? (applies to <i>O. mykiss</i>)		X	9.1.7 9.1.8
13.	If item 12. is "NO" for meeting the minimum DO levels for the organism used, was the DO adjusted up to the acceptable range (see a., b., and c. above) prior to test initiation?	NA		9.1.8
14.	If the DO of the sample was greater than saturation at the test temperature, was the sample aerated to reduce it prior to test initiation?	X		9.1.8
15.	If the sample had a chlorine residual, was it dechlorinated?	NA		9.1.6

#	ACUTE DATA PARAMETER - (Some are organism specific)	YES	NO	Manual or Permit Req.
16.	Did the permit allow for dechlorination of the sample? (Only if it contains a compliance schedule for Cl limit or for dechlorination)	NA		VA DEQ guidance Permit
17.	If the sample was dechlorinated, were controls treated with the same amount of dechlorination agent and run with untreated controls? (determines adverse effect of agent)	X		9.1.6
18.	Was the sample pH within the 6.0 - 9.0 range?	X		9.1.9
19.	If 18. is NO, and if the sample pH was adjusted, were parallel tests, one with an adjusted pH and one without an adjusted pH, run? NOTE: VA DEQ prefers that the effluent is used "as is", with regard to pH.	NA		9.1.9
20.	If the pH was adjusted, was it adjusted to pH 7.0 (Freshwater tests) or pH 8.0 (Saltwater tests) by adding 1N NaOH or 1N HCl?	NA		9.1.9
21.	Was the age of the organisms in the correct range at test initiation? a. <i>P. promelas</i> and <i>C. variegatus</i> - 1-14 days old, within 24 hours of age of each other b. <i>O. mykiss</i> – 15 (swim-up or yolk sac adsorption)-30 days old c. <i>C. dubia</i> - <24 hours old d. <i>A. bahia</i> - 1-5 days old, within 24 hours of age of each other	X X		Tables 11-16
22.	Were 5 geometric test concentrations (preferably 0.5 series) and 1 control (with the appropriate number of replicates) set up for LC ₅₀ or multi-dilution NOAEC tests?	X		2.3 9.3.2
23.	If the test organisms were obtained from an outside source, was a reference toxicant test run concurrently?	NA		4.7.3
24.	If the concurrently run reference toxicant test should fail to meet acceptability criteria, was the reference toxicant test repeated?	NA		4.7.5
25.	Was the test chamber size acceptable? a. <i>P. promelas</i> , <i>C. variegatus</i> , <i>A. bahia</i> - 250 ml minimum b. <i>O. mykiss</i> - 5000 ml minimum c. <i>C. dubia</i> - 30 ml minimum	X X		Tables 12-19
26.	Was the sample volume acceptable? a. <i>P. promelas</i> , <i>C. variegatus</i> , <i>A. bahia</i> - 200 ml minimum b. <i>O. mykiss</i> - 4000 ml minimum c. <i>C. dubia</i> - 15 ml minimum	X X		Tables 12-19
27.	Was the minimum number of replicates per concentration represented? a. 2 replicates (LC ₅₀ tests) - <i>P. promelas</i> , <i>O. mykiss</i> , <i>C. variegatus</i> , <i>A. bahia</i> Note: Some permits may specify 4 reps with 5 organisms in each for the NOAEC test, which is acceptable. b. 4 replicates (LC ₅₀ tests) – <i>C. dubia</i>	X X		Tables 12-19
28.	Was the minimum number of organisms in each replicate (the number of organisms times the number of replicates must equal 20 or more)? a. 10 organisms (LC ₅₀ tests) - <i>P. promelas</i> , <i>O. mykiss</i> , <i>C. variegatus</i> , <i>A. bahia</i> Note: Some permits may specify 4 reps with 5 organisms in each for the NOAEC test, which is acceptable. b. 5 organisms (LC ₅₀ tests) – <i>C. dubia</i>	X X		Tables 12-19
29.	a. Was the dilution water synthetic moderately hard water or 20% DMW? (applies to freshwater species <i>P. promelas</i> , <i>O. mykiss</i> , <i>C. dubia</i>) b. Was the dilution water synthetic sea water made with deionized water and sea salts adjusted to 20 ± 2 ppt, or the same salinity as the receiving water? (applies to salt water species, <i>C. variegatus</i> , <i>A. bahia</i>)	X		7.1.1.1. 7.2.1. Table 7.

#	ACUTE DATA PARAMETER - (Some are organism specific)	YES	NO	Manual or Permit Req.
30.	Freshwater - Was the dilution water hardness within the range of 80-100 mg CaCO ₃ /L?	X		Tables 7, 8
31.	Freshwater - Was the dilution water alkalinity within the 57-64 mg CaCO ₃ /L?	X		Tables 7, 8
32.	Freshwater - Was the dilution water pH within the range of 7.4 – 7.8, or 7.9 – 8.3 for mineral water?	X		Tables 7, 8
33.	<p>a. The average test temperature for tests using <i>P. promelas</i>, <i>C. dubia</i> <i>C. variegatus</i>, or <i>A. bahia</i> should be 25±1° C upon initiation and throughout the test. Did the test temperatures deviate by <u>not</u> more than 3° C (maximum minus minimum temperature) during the test? More than a 3° deviation is a “No”</p> <p>b. The average test temperature for tests using <i>O. mykiss</i> should be 12±1° C upon initiation and throughout the test. Did the test temperatures deviate by <u>not</u> more than 3° C (maximum minus minimum temperature) during the test? More than a 3° deviation is a “No”</p>	X		9.12.1, Tables 12-19, and VA DEQ guidance
34.	Was the temperature measured daily in one replicate of each concentration?	X		4.6.1 10.2.1.4
NOTE	If surrogate sample chambers were used for probe measurements, they MUST have contained the same number of organisms as the test chambers and have been subject to the same conditions as the test chambers; else, the data are not acceptable. This applies to pH, DO and conductivity readings.			
35.	Was the DO measured daily in one replicate of each concentration?	X		4.6.1 10.2.1
36.	If the DO dropped to <4.0 mg/l, was aeration initiated? (Exceptions to this requirement are for tests using <i>C. dubia</i> , where aeration is impractical.)	NA		9.14.1
37.	If aeration was necessary (and acceptable), were all test chambers aerated for the duration of the test, and the time at which aeration was initiated recorded?	NA		9.14.2
38.	If aeration was necessary (and acceptable), was it applied at a maximum rate of 100 bubbles/minute so as not to cause injury to the organisms?	NA		9.14.2
39.	Was pH measured at the 0, 24, and 48 hours for a 48-hour test, or at 0, 24, 48 hours, after renewal, 72 and at 96 hours for a 96-hour test in one replicate of each sample concentration?	X		4.6.1 10.2.1
40.	<p>a. For a freshwater test, was conductivity measured at the beginning and end (also at renewal for 96-hour tests) of the test in the highest concentration and the control? (applies to freshwater species <i>P. promelas</i>, <i>O. mykiss</i>, <i>C. dubia</i>) NOTE: It is recommended by VA DEQ that conductivity is measured in one replicate of each concentration at the beginning, renewal, and termination of a test.</p> <p>b. For a saltwater test, was salinity measured at the beginning and end (also at renewal for 96-hour tests) of the test in the highest concentration and the control? (applies to salt water species, <i>C. variegatus</i>, <i>A. bahia</i>) NOTE: It is recommended by VA DEQ that salinity is measured in one replicate of each concentration at the beginning, renewal, and termination of a test.</p>	X		10.2.1, 10.2.3 and VA DEQ guidance
41.	For freshwater tests, was the alkalinity measured in 100% effluent and the control at the beginning of the test and at test renewal if the test is 96 hours in duration?	X		9.1.4 10.2.1.1
42.	For freshwater tests, was the hardness measured in 100% effluent and the control at the beginning of the test and at test renewal if the test is 96 hours in duration?	X		9.1.4 10.2.1.1
43.	Was total ammonia measured in the effluent where toxicity may be contributed by unionized ammonia (i.e., where total ammonia = 5 mg/l)?	X		9.1.5

#	ACUTE DATA PARAMETER - (Some are organism specific)	YES	NO	Manual or Permit Req.
44.	a. For a test using <i>Americamysis bahia</i> , were the mysids fed <i>Artemia</i> nauplii daily? b. For a 96-hour test using <i>Pimephales promelas</i> , or <i>Cyprinodon variegatus</i> , were the larvae fed prior to sample renewal at 48 hours?	NA		9.11.1
45.	For a 96-hour test using <i>Pimephales promelas</i> , <i>Oncorhynchus mykiss</i> , or <i>Cyprinodon variegatus</i> , was the sample used for renewal the original sample?	NA		8.5.4
46.	Was the daily photoperiod 16 hours light/8 hours dark?	X		9.10
47.	Were the surviving organisms counted daily in all test chambers?	X		10.1.4
48.	Was the test terminated at 48±1 hours (less than 47 hours invalidates the test) or 96±1 hours (less than 95 hours invalidates the test)?	X		VA DEQ guidance
49.	Was the percent survival in each concentration recorded at the end of the test?	X		VA DEQ guidance
50.	Was the percent survival in the controls ≥90%?	X		4.9.19.16.1
51.	Was the LC ₅₀ correctly determined?	X		11.2
52.	If the acute test was run in conjunction with a chronic test using the same species, was the acute test initiated with the second or third sample pulled for the chronic test? (Any sample other than the same sample used to initiate the chronic test is preferred.)	NA		VA DEQ guidance

Comments on the Acute Data Review Form

Items in bold type (and shaded) are significant in that if they are answered "NO", the test is automatically deemed "not acceptable" and must be repeated to fulfill permit TMP requirements. Bold type items are numbers 2, 3, 7, 10, 13, 16, 21, 22, 23, 33, 34, 48 and 50.

RESPONSE GUIDE

- | | |
|--------------------|--|
| 1. Yes | 12. Yes |
| 2. Yes | 13. If 12 "No", then Yes |
| 3. Yes | 14. Yes |
| 4. Yes | 15. Yes or No |
| 5. Yes, preferably | 16. Yes if 15. is "Yes", or No if 15. is "No" |
| 6. Yes | 17. Yes if 15. is "Yes", or N/A |
| 7. Yes | 18. Yes or No |
| 8. Yes | 19. to 35 Yes |
| 9. Yes or N/A | 36. Yes or N/A |
| 10. Yes | 37. to 52 Yes |
| 11. Yes or N/A | |

RESULTS:

ACCEPTABLE	
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COMMENTS: Reviewed by DDF on 11/13/08

ACUTE TEST DATA REVIEW CHECKLIST

Revised July 16, 2008

Referencing "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms",
Fifth Edition, EPA 821-R-02-012, October 2002

Permit Number: VA0087700

Outfall: 002

Permittee: ARC Gainesville

Test Date: 07/25/08

Period Reviewed: QT SA AN X Other:
1st 2nd 3rd 4th
5th X 6th 7th 8th

Testing Laboratory: Coastal Bioanalysts, Inc.

#	ACUTE DATA PARAMETER - (Some are organism specific)	YES	NO	Manual or Permit Req.
1.	Was the test performed as per schedule?	X		Permit
2.	Was the correct test performed?	X		Permit
3.	Was the correct type of sample used?	X		Permit
4.	Was the chain of custody form supplied with the test report?	X		VA DEQ guidance
5.	Were pH, temp, Cl of sample checked at sample site (or within 15 minutes of sample retrieval)?	X		VA DEQ guidance
6.	If the sample was collected for off-site toxicity testing, was it held at 0-6° C during collection (composite) or chilled immediately following collection (grab)?	X		8.5.7.1
7.	Was the sample packed in ice and chilled to 0-6° C for transport to an off-site toxicity testing facility? NOTE: Frozen samples are not valid! NOTE: An exception to this would be for samples that are delivered for same day testing that may not have a chance to cool to this temperature range.	X		8.5.1, 8.5.7.1
8.	Were temperature and sample description recorded upon receipt by the lab?	X		8.6.1
9.	Does description (visual, obvious scent) of sample (when received at lab) seem typical for this type of facility?	X		VA DEQ guidance
10.	Was the test initiated within 36 hours of sample retrieval from sampler? NOTE: In isolated cases, an extension to this holding time can be allowed by VA DEQ (CO). Documentation of this permission must be presented with the test report and include the supportive data mentioned in 8.5.4 and 8.7.1	X		8.5.4, 8.6.2, and 8.7.1
11.	If filtration was necessary to remove debris or indigenous organisms, was a sieve with =60 µm mesh openings used?	NA		7.3.5
12.	a. Was the sample DO ≥ 4.0 mg/l and ≤ saturation at 25° C prior to test initiation? (applies to <i>C. dubia</i> , <i>P. promelas</i>) b. Was the sample DO ≥ 4.0 mg/l and ≤ saturation at 25° C at 20 ppt salinity prior to test initiation? (applies to <i>A. bahia</i> , <i>C. variegatus</i>) c. Was the sample DO ≥ 6.0 mg/l and ≤ saturation at 12° C prior to test initiation? (applies to <i>O. mykiss</i>)		X	9.1.7 9.1.8
13.	If item 12. is "NO" for meeting the minimum DO levels for the organism used, was the DO adjusted up to the acceptable range (see a., b., and c. above) prior to test initiation?	NA		9.1.8
14.	If the DO of the sample was greater than saturation at the test temperature, was the sample aerated to reduce it prior to test initiation?	X		9.1.8
15.	If the sample had a chlorine residual, was it dechlorinated?	NA		9.1.6

#	ACUTE DATA PARAMETER - (Some are organism specific)	YES	NO	Manual or Permit Req.
16.	Did the permit allow for dechlorination of the sample? (Only if it contains a compliance schedule for Cl limit or for dechlorination)	NA		VA DEQ guidance Permit
17.	If the sample was dechlorinated, were controls treated with the same amount of dechlorination agent and run with untreated controls? (determines adverse effect of agent)	X		9.1.6
18.	Was the sample pH within the 6.0 - 9.0 range?	X		9.1.9
19.	If 18. is NO, and if the sample pH was adjusted, were parallel tests, one with an adjusted pH and one without an adjusted pH, run? NOTE: VA DEQ prefers that the effluent is used "as is", with regard to pH.	NA		9.1.9
20.	If the pH was adjusted, was it adjusted to pH 7.0 (Freshwater tests) or pH 8.0 (Saltwater tests) by adding 1N NaOH or 1N HCl?	NA		9.1.9
21.	Was the age of the organisms in the correct range at test initiation? a. <i>P. promelas</i> and <i>C. variegatus</i> - 1-14 days old, within 24 hours of age of each other b. <i>O. mykiss</i> – 15 (swim-up or yolk sac adsorption)-30 days old c. <i>C. dubia</i> - <24 hours old d. <i>A. bahia</i> - 1-5 days old, within 24 hours of age of each other	X X		Tables 11-16
22.	Were 5 geometric test concentrations (preferably 0.5 series) and 1 control (with the appropriate number of replicates) set up for LC ₅₀ or multi-dilution NOAEC tests?	X		2.3 9.3.2
23.	If the test organisms were obtained from an outside source, was a reference toxicant test run concurrently?	NA		4.7.3
24.	If the concurrently run reference toxicant test should fail to meet acceptability criteria, was the reference toxicant test repeated?	NA		4.7.5
25.	Was the test chamber size acceptable? a. <i>P. promelas</i> , <i>C. variegatus</i> , <i>A. bahia</i> - 250 ml minimum b. <i>O. mykiss</i> - 5000 ml minimum c. <i>C. dubia</i> - 30 ml minimum	X X		Tables 12-19
26.	Was the sample volume acceptable? a. <i>P. promelas</i> , <i>C. variegatus</i> , <i>A. bahia</i> - 200 ml minimum b. <i>O. mykiss</i> - 4000 ml minimum c. <i>C. dubia</i> - 15 ml minimum	X X		Tables 12-19
27.	Was the minimum number of replicates per concentration represented? a. 2 replicates (LC ₅₀ tests) - <i>P. promelas</i> , <i>O. mykiss</i> , <i>C. variegatus</i> , <i>A. bahia</i> Note: Some permits may specify 4 reps with 5 organisms in each for the NOAEC test, which is acceptable. b. 4 replicates (LC ₅₀ tests) – <i>C. dubia</i>	X X		Tables 12-19
28.	Was the minimum number of organisms in each replicate (the number of organisms times the number of replicates must equal 20 or more)? a. 10 organisms (LC ₅₀ tests) - <i>P. promelas</i> , <i>O. mykiss</i> , <i>C. variegatus</i> , <i>A. bahia</i> Note: Some permits may specify 4 reps with 5 organisms in each for the NOAEC test, which is acceptable. b. 5 organisms (LC ₅₀ tests) – <i>C. dubia</i>	X X		Tables 12-19
29.	a. Was the dilution water synthetic moderately hard water or 20% DMW? (applies to freshwater species <i>P. promelas</i> , <i>O. mykiss</i> , <i>C. dubia</i>) b. Was the dilution water synthetic sea water made with deionized water and sea salts adjusted to 20 ± 2 ppt, or the same salinity as the receiving water? (applies to salt water species, <i>C. variegatus</i> , <i>A. bahia</i>)	X		7.1.1.1. 7.2.1. Table 7.

#	ACUTE DATA PARAMETER - (Some are organism specific)	YES	NO	Manual or Permit Req.
30.	Freshwater - Was the dilution water hardness within the range of 80-100 mg CaCO ₃ /L?	X		Tables 7, 8
31.	Freshwater - Was the dilution water alkalinity within the 57-64 mg CaCO ₃ /L?	X		Tables 7, 8
32.	Freshwater - Was the dilution water pH within the range of 7.4 – 7.8, or 7.9 – 8.3 for mineral water?	X		Tables 7, 8
33.	<p>a. The average test temperature for tests using <i>P. promelas</i>, <i>C. dubia</i> <i>C. variegatus</i>, or <i>A. bahia</i> should be 25±1° C upon initiation and throughout the test. Did the test temperatures deviate by <u>not</u> more than 3° C (maximum minus minimum temperature) during the test? More than a 3° deviation is a “No”</p> <p>b. The average test temperature for tests using <i>O. mykiss</i> should be 12±1° C upon initiation and throughout the test. Did the test temperatures deviate by <u>not</u> more than 3° C (maximum minus minimum temperature) during the test? More than a 3° deviation is a “No”</p>	X		9.12.1, Tables 12-19, and VA DEQ guidance
34.	Was the temperature measured daily in one replicate of each concentration?	X		4.6.1 10.2.1.4
NOTE	If surrogate sample chambers were used for probe measurements, they MUST have contained the same number of organisms as the test chambers and have been subject to the same conditions as the test chambers; else, the data are not acceptable. This applies to pH, DO and conductivity readings.			
35.	Was the DO measured daily in one replicate of each concentration?	X		4.6.1 10.2.1
36.	If the DO dropped to <4.0 mg/l, was aeration initiated? (Exceptions to this requirement are for tests using <i>C. dubia</i> , where aeration is impractical.)	NA		9.14.1
37.	If aeration was necessary (and acceptable), were all test chambers aerated for the duration of the test, and the time at which aeration was initiated recorded?	NA		9.14.2
38.	If aeration was necessary (and acceptable), was it applied at a maximum rate of 100 bubbles/minute so as not to cause injury to the organisms?	NA		9.14.2
39.	Was pH measured at the 0, 24, and 48 hours for a 48-hour test, or at 0, 24, 48 hours, after renewal, 72 and at 96 hours for a 96-hour test in one replicate of each sample concentration?	X		4.6.1 10.2.1
40.	<p>a. For a freshwater test, was conductivity measured at the beginning and end (also at renewal for 96-hour tests) of the test in the highest concentration and the control? (applies to freshwater species <i>P. promelas</i>, <i>O. mykiss</i>, <i>C. dubia</i>) NOTE: It is recommended by VA DEQ that conductivity is measured in one replicate of each concentration at the beginning, renewal, and termination of a test.</p> <p>b. For a saltwater test, was salinity measured at the beginning and end (also at renewal for 96-hour tests) of the test in the highest concentration and the control? (applies to salt water species, <i>C. variegatus</i>, <i>A. bahia</i>) NOTE: It is recommended by VA DEQ that salinity is measured in one replicate of each concentration at the beginning, renewal, and termination of a test.</p>	X		10.2.1, 10.2.3 and VA DEQ guidance
41.	For freshwater tests, was the alkalinity measured in 100% effluent and the control at the beginning of the test and at test renewal if the test is 96 hours in duration?	X		9.1.4 10.2.1.1
42.	For freshwater tests, was the hardness measured in 100% effluent and the control at the beginning of the test and at test renewal if the test is 96 hours in duration?	X		9.1.4 10.2.1.1
43.	Was total ammonia measured in the effluent where toxicity may be contributed by unionized ammonia (i.e., where total ammonia = 5 mg/l)?	X		9.1.5

#	ACUTE DATA PARAMETER - (Some are organism specific)	YES	NO	Manual or Permit Req.
44.	a. For a test using <i>Americamysis bahia</i> , were the mysids fed <i>Artemia</i> nauplii daily? b. For a 96-hour test using <i>Pimephales promelas</i> , or <i>Cyprinodon variegatus</i> , were the larvae fed prior to sample renewal at 48 hours?	NA		9.11.1
45.	For a 96-hour test using <i>Pimephales promelas</i> , <i>Oncorhynchus mykiss</i> , or <i>Cyprinodon variegatus</i> , was the sample used for renewal the original sample?	NA		8.5.4
46.	Was the daily photoperiod 16 hours light/8 hours dark?	X		9.10
47.	Were the surviving organisms counted daily in all test chambers?	X		10.1.4
48.	Was the test terminated at 48±1 hours (less than 47 hours invalidates the test) or 96±1 hours (less than 95 hours invalidates the test)?	X		VA DEQ guidance
49.	Was the percent survival in each concentration recorded at the end of the test?	X		VA DEQ guidance
50.	Was the percent survival in the controls ≥90%?	X		4.9.19.16.1
51.	Was the LC ₅₀ correctly determined?	X		11.2
52.	If the acute test was run in conjunction with a chronic test using the same species, was the acute test initiated with the second or third sample pulled for the chronic test? (Any sample other than the same sample used to initiate the chronic test is preferred.)	NA		VA DEQ guidance

Comments on the Acute Data Review Form

Items in bold type (and shaded) are significant in that if they are answered "NO", the test is automatically deemed "not acceptable" and must be repeated to fulfill permit TMP requirements. Bold type items are numbers 2, 3, 7, 10, 13, 16, 21, 22, 23, 33, 34, 48 and 50.

RESPONSE GUIDE

- | | |
|--------------------|--|
| 1. Yes | 12. Yes |
| 2. Yes | 13. If 12 "No", then Yes |
| 3. Yes | 14. Yes |
| 4. Yes | 15. Yes or No |
| 5. Yes, preferably | 16. Yes if 15. is "Yes", or No if 15. is "No" |
| 6. Yes | 17. Yes if 15. is "Yes", or N/A |
| 7. Yes | 18. Yes or No |
| 8. Yes | 19. to 35 Yes |
| 9. Yes or N/A | 36. Yes or N/A |
| 10. Yes | 37. to 52 Yes |
| 11. Yes or N/A | |

RESULTS:

ACCEPTABLE	
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COMMENTS: Reviewed by DDF on 11/13/08

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of stormwater into a water body in Prince William County, Virginia.

PUBLIC COMMENT PERIOD: May 20, 2009 to 5:00 p.m. on June 19, 2009

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Stormwater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Atlantic Research Corporation – Gainesville
5945 Wellington Road, Gainesville, VA 20155
VA0087700

NAME AND ADDRESS OF FACILITY: Atlantic Research Corporation – Gainesville
5945 Wellington Road, Gainesville, VA 20155

PROJECT DESCRIPTION: Atlantic Research Corporation (ARC) has applied for a reissuance of a permit for the private ARC-Gainesville facility. The applicant proposes to release storm water at a maximum rate of 128.4 and 27.6 million gallons per day into a water body from Outfall 001 and Outfall 002, respectively. There is no s ludge generated at this facility. The facility proposes to release the storm water in the Rocky Branch, UT, in Prince William County in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, Total Recoverable Aluminum, Total Recoverable Iron, Total Recoverable Zinc and Total Suspended Solids .

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. DEQ may hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment.

Name: Anna T. Westernik

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3837 E-mail: atwesternik@deq.virginia.gov Fax: (703) 583-3821

Revised 2/2003

**State “Transmittal Checklist” to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review**

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Atlantic Research Corporation -- Gainesville
NPDES Permit Number:	VA0087700
Permit Writer Name:	Douglas Frasier
Date:	December 29, 2008

Major [☐]

Minor [☒]

Industrial [☒]

Municipal [☐]

I.A. Draft Permit Package Submittal Includes:

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?			X
8. Whole Effluent Toxicity Test summary and analysis?	X		
9. Permit Rating Sheet for new or modified industrial facilities?	X		

I.B. Permit/Facility Characteristics

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?			X
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?	X		
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?		X	
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?		X	
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?	X		
10. Does the permit authorize discharges of storm water?	X		

LB. Permit/Facility Characteristics – cont.	Yes	No	N/A
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?	X		
12. Are there any production-based, technology-based effluent limits in the permit?			X
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?			X
14. Are any WQBELs based on an interpretation of narrative criteria?			X
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Review Checklist – For Non-Municipals (To be completed and included in the record for all non-POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ)	Yes	No	N/A
1. Is the facility subject to a national effluent limitations guideline (ELG)?		X	
a. If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source?			X
b. If no, does the record indicate that a technology-based analysis based on Best Professional Judgement (BPJ) was used for all pollutants of concern discharged at treatable concentrations?			X
2. For all limits developed based on BPJ, does the record indicate that the limits are consistent with the criteria established at 40 CFR 125.3(d)?			X
3. Does the fact sheet adequately document the calculations used to develop both ELG and /or BPJ technology-based effluent limits?			
4. For all limits that are based on production or flow, does the record indicate that the calculations are based on a “reasonable measure of ACTUAL production” for the facility (not design)?			X
5. Does the permit contain “tiered” limits that reflect projected increases in production or flow?		X	
a. If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained?			X
6. Are technology-based permit limits expressed in appropriate units of measure (e.g., concentration, mass, SU)?			X
7. Are all technology-based limits expressed in terms of both maximum daily, weekly average, and/or monthly average limits?			X
8. Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ?		NA	

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?			X
2. Does the record indicate that any WQBELs were derived from a completed and EPA approved TMDL?			X
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?			X
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?			X

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	X		
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations where data are available)?			X
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?			X
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?			X
6. For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short-term (e.g., maximum daily, weekly average, instantaneous) effluent limits established?			X
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?			X
8. Does the fact sheet indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	X		

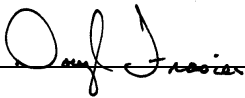
II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require testing for Whole Effluent Toxicity in accordance with the State’s standard practices?		X	

II.F. Special Conditions	Yes	No	N/A
1. Does the permit require development and implementation of a Best Management Practices (BMP) plan or site-specific BMPs?	X		
a. If yes, does the permit adequately incorporate and require compliance with the BMPs?	X		
2. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
3. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		

II.G. Standard Conditions	Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?	X		
List of Standard Conditions – 40 CFR 122.41			
Duty to comply	Property rights	Reporting Requirements	
Duty to reapply	Duty to provide information	Planned change	
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance	
not a defense	Monitoring and records	Transfers	
Duty to mitigate	Signatory requirement	Monitoring reports	
Proper O & M	Bypass	Compliance schedules	
Permit actions	Upset	24-Hour reporting	
		Other non-compliance	
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for existing non-municipal dischargers regarding pollutant notification levels [40 CFR 122.42(a)]?	X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Douglas Frasier</u>
Title	<u>Environmental Specialist II</u>
Signature	<u></u>
Date	<u>December 29, 2008</u>